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The Meaning of Work in an Age of Automation*

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THE TITLE of this article is, in a sense, misleading. It would be presumptuous to assert that we now have sufficient evidence to point conclusively to the changes in the concept of work which automation will generate. Indeed, experts are not at all agreed on what automation is — whether it is simply an extension of the normal trend of technological change or whether it is something new. Nonetheless, it might be fruitful to speculate on the impact of automation on the concept "work," and one way this can be done is to examine some aspects of the "meaning of work in the age of the machine." Clearly, automated processes are related to machine processes, and the impact of the machine upon work should yield some clues by which a tentative assessment can be made of automation's effects.

The thesis of this paper can be stated as follows:

(1) Work is one of the principal sources of status in our society. The kind of work that we do, to the extent that it can be readily identified and given a meaningful label by our associates, gives us, in great measure, our place in life.

(2) The subdivision of labor which came with the extension of the machine has to a considerable extent removed that label so that now, unless one follows one of the professions or still retains one of the traditional crafts or skills, status must come from some other source. For the unskilled or semiskilled worker — the machine tender — it comes largely either from the organization for which the work is performed or from the physical accouterments of our culture, the things that money can buy. The work itself no longer serves the essential function it did in an earlier time.

(3) Work satisfaction is bound up with the degree to which the worker can exercise his judgment on his job and thus have some control over how he spends his time and effort. Workers will go to great lengths to increase the "judgment-content" of their work, much to the annoyance and frustration of the industrial engineer and even the top corporation executive.

(4) Just as the machine substituted mechanical power for muscular power, automation promises to substitute the judgment of electronic sensing devices for human judgment in a large category of manufacturing and data-processing operations. As the machine generated changes in industry and society, so automation will alter our consumption of leisure and our concepts of work, and may give living a new character.

Sources of Status

Work is the inescapable fate of the overwhelming majority of men and women. Despite a recent cultural tend-

* This article makes use of material presented by the author at the 1957 Conference on Automation at Indiana State Teachers College.

ency to de-emphasize hard work and to accentuate "having a good time" (presumably, the antithesis of labor), work still remains the most important segment of adult life. The impact of work routines is found in almost every aspect of living and even in the world of dreams and unconscious fantasies. It is not an overstatement to suggest that work is not *part* of life, it is literally life itself.

A man's work is one of the most important things by which he is judged and certainly one of the more significant things by which he judges himself. The work that he does is what Everett Hughes calls a combination calling card and price tag.[1] The import of this is emphasized by the fact that one of the first things we want to know about a stranger is what kind of work he does. Our judgment of him is based, to a considerable degree, on an identification of his work. And his judgment of himself is also given in similar terms. The door-to-door salesman is likely to describe himself as being in sales work or in promotional work rather than as a "pot and pan salesman." Press agents become "public relations counselors" and Sunday School teaching becomes religious education. Recently a Chicago restaurateur announced that his waitresses are now called "hostesses," the hostesses "food service directors," the busboys "table servicemen," and the dishwashers "utensil maintenance men."[2] Even social scientists emphasize the "science" end of their names. These hedging statements in which people pick the most favorable of several possible names for their work imply an audience. "And one of the most important things about any man is his audience, or his choice of the several available audiences to which he may address his claims to be someone of worth."[3]

These comments suggest that man's work is one of the most important parts of his social identity, of his self, indeed of his fate, in life.

It requires little more than passing familiarity with the organization of factory production to note the dissimilarity between the role of the machine operator or tender and that of the craftsman producing finished articles for the trade. Two differences seem most notable: mechanization and standardization give the worker little but negative control over work methods or quality of product, and the minute subdivision of labor blurs out the part of any single workman in the total process. Ask a worker who is operating a production lathe in Department 22 to tell you exactly how the work he does fits into the work that is done in Department 23 or Department 21, or in the other side of the building, or in Plant 2, or into the work done in the home office in New York. The typical modern factory or industrial establishment is host to so many specialized functions that it is unlikely that any single individual can describe the processes necessary to manufacture and market the product or even the processes that take place in a single department to make only a small part of the product. It is even difficult for a worker to describe his

[1] Everett C. Hughes, "Work and Self," in John H. Rohrer and Muzafer Sherif, *Social Psychology at the Crossroads* (New York: Harper and Brothers, 1951), pp. 313-14.

[2] *Time,* April 15, 1957.

[3] Hughes, *op. cit.,* p. 314.

own activities at work in relation to the activities of his neighbor at the next machine.

The specialization of function found in the modern factory removes any semblance of a "property" relationship between the producer and the product of his toil. Indeed, one can argue, as does Peter Drucker, that it is no longer the worker who is responsible for the final product. It is now the factory. The factory has become the unit of production and the worker does work — he does not make a product. There was a time in our society, albeit many years ago, when a shoemaker actually made shoes. But in the modern shoe factory, the workman cannot say that he is making shoes; he is operating a machine which makes parts of shoes. With the assembly-line method of production, the worker may well ask, as he often does: "What satisfaction am I supposed to get from putting nuts on bolts eight hours a day, or attaching the shock absorbers to a moving chassis?" Examples such as these lend support to the usual dreary picture of routinized, standardized, time-sequence-paced, elementally described, machine-controlled work.

The impact of the machine upon work and its meaning was stated by Adam Smith. He wrote:

> The understandings of the greater part of men are necessarily formed by their ordinary employments. The man whose life is spent in performing a few simple operations . . . has no occasion to exert his understanding. . . . He generally becomes as stupid and ignorant as it is possible for a human creature to become.[4]

Almost a century and a quarter later this notion was rephrased by F. W. Taylor, whose efforts to rationalize man's work brought him world-wide fame. Taylor sought to reduce work to its simplest components and then describe them for the operator. A latent purpose was to take from the worker his opportunity to exercise judgment over his work. Taylor taught a Pennsylvania Dutchman, whom he called Schmidt, to handle 47 tons of pig iron a day instead of the previous 12.5 tons "and make him glad to do it."[5] Every detail of the man's job was specified and a "scientific manager" was assigned to supervise every moment of his work — when to pick up a pig, how to carry it, how far to walk with it, when to put it down, when to rest, how to load it onto a car. Taylor got the optimum amount of work out of Schmidt by systematically prescribing each component of the task. By exact precalculation, even to three decimal places, he got the desired response.

Taylor recognized that this kind of mechanical regime would have some impact upon the man who followed it, and prescribed the kind of worker who could best carry out his directions: "One of the very first requirements for a man who is to handle pig iron as a regular occupation," he wrote, "is that he shall be stupid and so phlegmatic that he more nearly resembles an ox than any other type."[6]

In most respects, these dire predictions have not been realized as their predictors stated. But one wonders if

[4] Adam Smith, *The Wealth of Nations* (New York: Modern Library, 1937), p. 734.

[5] Frederick W. Taylor, *The Principles of Scientific Management* (New York: Harper and Brothers, 1947), pp. 40-48.

[6] *Ibid.*, p. 59.

the predictions have failed largely because workers refused to let the machines (and the logic of efficiency in which the machine is central) take from them what judgmental faculties they still possessed, and if this refusal has not been expressed in the ingenious ways workers find to exercise judgment designed to "beat" this logic. If only a small fraction of the ingenuity which the worker applies to beating the industrial engineer could be tapped *by* the engineer and put to work *for* the company, perhaps the productivity of the American industrial system — ignoring for the moment problems of distribution and consumption — would make the promise of the "full life" almost a reality and would do it without automation.

It is often said that modern man is alienated from his society — that he suffers from a loss of roots, that he finds it difficult to attach lasting sentiments to any of the values of his society. In substance, it is said, man finds little satisfaction from the world in which he lives and that his "depersonalization" has come as a result of the industrial system which he has created. If it is true that one of man's principal sources of satisfaction and identification derives from his work, then we can hardly escape the conclusion that the machine has indeed alienated man so far as it has made it difficult for him to achieve a readily identifiable status as in an earlier time. When a man describes his work as a carpenter, a blacksmith, a bookkeeper, a dentist, a bricklayer, a plumber, or even a janitor, his audience can fairly well assign a status to him in terms of his work and relate that status to their own. But when a man describes his work as, for example, a "stud torquer," a "gin pole operator," a "back winder," or a "facing tacker," what status does this give him? What identification — what price tag or name card — goes along with these kinds of work? Mostly either a question — "What's that?" — or perhaps even laughter. Thus, the stud torquer, when asked "What do you do?" is more likely to say, "I work for the Ford Motor Company," and the "gin pole operator" is likely to respond with, "I work for the ABC Construction Company." That is, such a worker gets his status, his identification, not from the work that he *does,* but from the organization that employs him. One of the current best sellers is W. H. Whyte's *The Organization Man,* and one wonders just how much this new creature is really a product of a status-requiring and machine-denying technology.

The idea of alienation also involves the satisfaction one gets from one's work as a result of the amount of control one exercises over it. There is good research evidence to show that for many people work satisfaction is bound up with the possibility that the worker can maintain some control over decisions of what work to do and over the disposition of his time and routine. Indeed, if we examine those occupations which carry high prestige, the skilled crafts and the professions, we find, as we go up the ladder of skill, greater and greater degrees of judgment exercised by the worker and wider and wider areas of decision control brought to bear by the worker on his work. Certainly, not all workers covet control-retaining occupations.

Many probably prefer rudimentary and directed activity rather than judgment-making work. But it does suggest that our society puts a prestige premium on the occupations which require higher degrees of individual control and the use of individual judgment.

This is not to argue that a specialization of function — a minute division of labor — removes the value of skill in the organization of production. What is most often removed is the comprehension of the community — one's audience — with respect to the work that we do, and therefore there is introduced a difficulty in assigning some appropriate status to the worker. A semiautomatic machine accomplishes a number of distinct but continuous processing operations, to the open-mouthed awe of a visiting dignitary. It may depend for its continued operation on a workman who checks dials and gauges, makes decisions, and bears the responsibility. But the machine is likely to be far more spectacular than the workman and the machine gets the bulk of the credit. The worker's pride is very nearly pointless unless it is upheld by the esteem of the community. Thus, specialized work that is insulated from recognition by the worker's significant community — those whose opinions of him mean the most to him — violates the sentiments of "craftsmanship."

There is another characteristic of the dependence of the worker upon the machine that has significance for the loss of workmanship: the tendency to desocialize the worker in favor of strengthening his orientation toward the machine. This tendency toward social isolation in the shop may be the product of painfully close supervision in an attempt to keep the worker devoted to duty, it may be the result of the "stretch-out" (the compounding of duties on a single worker), or it may be the deliberate or unconscious spatial arranging of job assignments to make it more difficult for the workers to develop informal relationships among themselves.

Subservience to the machine is never so apparent (whether "real" to the observer or not) as when the machine or the conveyor belt forms the sole aspect of the environment taken into account by those responsible for the assignment of tasks.[7]

The effect of the machine upon the worker has still other manifestations. The loss of control over work can be seen as related to obsessive reveries, the evasion of thought about work, day dreams while on the job, and the substitution of the glamour of leisure for the drudgery of work. The monotony of routinized factory work often produces a kind of crazy racing against the clock, the organization of slowdowns as a tactic in the silent war of the worker against the time-study man and the industrial engineer, ordinary horseplay to break the monotony, and the spectacular and violent eruption of wildcat strikes, ostensibly against "speed-ups" but often generated, in part, by the utter boredom of routinized and trivialized labor. Dan Bell has said that if "conspicuous consumption" was the badge of a rising middle class, "conspicuous loafing" is the hostile

[7] Wilbert E. Moore, *Industrial Relations and the Social Order* (New York: Macmillan Company, 1951), p. 233.

gesture of a tired working class.[8] Sociologist Don Roy has described how, in many machine plants, workers play the "make-out" game.[9] A worker will "put-out" at a breakneck pace in order to fulfill a piecework quota so that he can be free for the rest of the day. Piecework is often preferred to "day work" or a flat payment of an hourly rate. The pause at lunch time provides the day-worker with the only break in the meaningless flow of work and time. By watching the clock, the pieceworker can construct an hour-by-hour schedule of work completions and the continuous flow of time is broken up into specific intervals. In this way the pieceworker marks his position in terms of the larger frame of the day's work. He achieves a victory over the despised time-study man when he "makes-out" early. And the foreman becomes a victim of defeat when the authority and discipline which he represents is successfully challenged by the pieceworker's newly found freedom. "Since worker inactivity, even after the completion of a fair day's work, seemed to violate a traditional supervisory precept of keeping the appearance of being busy even if there is nothing to do," writes Roy, "making out in four or five hours could be used as a way of getting even with the foremen for the pressures that they applied when the quota was unattainable."[10]

This kind of worker behavior has its counterpart even on an assembly line — a machine-paced activity. Though far more difficult to control, it still permits the assembly-line worker to exercise some individual judgment, some decision-making role, with respect to his work.

One of the very interesting findings made by Walker and Guest in a study called *The Man on the Assembly Line* was the way in which the men sought to "buck the line" by introducing variety in their own mechanical work rhythms. One way was to accumulate a number of subassembly items which they called "banks" and then take a short rest. Another was to free themselves, if only for a few moments at a time, from the mechanical harness to which they were hitched by "working up the line" very fast and then catching a breather. The most popular jobs in the plant were those of utility men, foremen, and repairmen — those least resembling assembly-line work. The utility men, who act as substitutes for the line men at various times, spoke of getting an idea of the whole line, of meeting and talking with different workers, and of knowing all the job. Wrote the authors,

> To one unfamiliar with assembly line work experiences the difference between a job taking two minutes to perform and a job taking four might seem far too trivial . . . [but] for the worker one of the most striking findings of this study is the psychological importance of even minute changes in his immediate job experience.[11]

[8] Daniel Bell, *Work and Its Discontents* (Boston: Beacon Press, 1956), p. 15.

[9] Donald Roy, "Work Satisfaction and Social Rewards in Quota Achievements," *American Sociological Review,* Vol. 18, No. 5 (October, 1953), pp. 507-14.

[10] *Ibid.,* p. 512.

[11] Charles R. Walker and Robert H. Guest, *The Man on the Assembly Line* (Cambridge: Harvard University Press, 1952), pp. 146 ff.

The Age of Automation

There is as yet practically no research data which is addressed to the impact of automation on the meaning of work. But we do have some clues, and these will be discussed in the following pages.

"Automation" is defined in various ways, but it may be summarily defined as the accomplishment of a work task by an integrated power-driven mechanism entirely without the *direct* application of human energy, skill, intelligence, or control. Automation is more than simple mechanization, and it is advancing on at least two levels of technology. One level is the so-called *continuous flow automation* which is typified by machines that replace men's muscles, eliminate physical effort, and substitute electricity for manpower and that are coupled to devices which eliminate human judgment in the administration or direction of the control of the machine. This has sometimes been called machines to run machines. It is the technique of the automatic mechanism which can watch what the machine is doing, make sure it follows the instructions, and automatically correct mistakes. Another phase of automation is sometimes called *business automation.* This is the use of computing and decision-making machines, so-called "electronic brains," which hand out administrative, statistical, and clerical policies. Conceivably, an entire plant can be operated under the administration of these types of machines. Doing so would involve analyzing sales reports, ordering and checking the flow of materials, scheduling and controlling the operations, making out invoices, recording payments, and so on — all by machine. Experiments are now going forward at an increasing rate to combine these two phases into a single computer-run system. Whether this technology is old or new is not relevant for our purpose here. Its most important consequences will be felt and are now being felt as a result of the tremendous pace with which it is being developed and put to use.

It seems clear that automation will have important social effects. Just as factory work impressed its rhythms on society, so the rhythms of automation will give a new character to leisure, to work, and to living.

First, automation may change the basic composition of the labor force, creating what Bell calls a new "salariat" instead of a "proletariat," as automated processes reduce the number of industrial workers required in factory production. In the automobile industry, for example, the number of production workers declined by 3.5 percent from 1947 to 1956, while the number of workers engaged in the processing of information increased 24.3 percent.[12]

Changes of similar magnitude have occurred in the aircraft and farm equipment manufacturing industries. And changes of even greater magnitude have occurred in the same period in the chemical and oil refining industries. These industries are among the leaders in the adoption of automated equipment. A few specific examples of the impact of automation on production manpower requirements may suf-

[12] *Business Week,* April 20, 1957, p. 153.

fice to give some indication of the direction in which manufacturing industry is headed.

Fourteen glass-blowing machines, each operated by one worker, now produce 90 percent of the glass light bulbs used in the United States and all the glass tubes (except picture tubes) used in radio and television sets. In the radio and television manufacturing industry, machines print or etch or stencil on a board what were formerly hand-wired circuits, soldered at all contact points; other machines attach standard electronic components to these printed circuit boards. Machines make the parts; machines assemble them. Once the components are fed into the machines, complete radio sets can be produced. On one radio assembly line, turning out 1,000 radios a day, two workers now produce more than 200 workers did with the old methods.

In the automobile industry, the non-automated engine plant has disappeared for all practical purposes. In the Ford Cleveland plant, built in 1952 and now being modernized because of obsolescence, one man runs a transfer machine performing more than 500 machine operations, whereas conventional methods required 35 to 70 men. Formerly, 400 workers took forty minutes to turn out one engine block; now, under automated methods, 48 workers complete a block in less than half that time. Automation has been applied in the handling of bulk materials in fertilizer plants. The "continuous flow" industries — oil refining and piping, chemicals, plastics, paint, beverages, rubber, flour milling, cement, electric power, telegraph and telephone, sheet steel and steel castings, and even baking — all have been undergoing radical changes in manufacturing processes in the last decade.

These technical changes may have several effects. With automated processes doing the work of large numbers of human workers, managers of enterprise may no longer have to worry about a large labor force. This means that new plants can be located away from major cities and closer to markets or sources of raw materials and fuels. It is often cheaper to build a completely automated factory from the ground up than to automate piecemeal an existing factory. Thus, there is an impetus toward constructing new plant facilities either on the peripheries of the large cities or away from them altogether. This, in time, may leave the giant, sprawling industrial metropolis as a dwelling place for human beings instead of a location for unsightly factories. The radio manufacturing, chemical, and automobile industries are already developing along these lines. And since automation involves continuous flow of materials and information in a highly integrated and coordinated fashion, it is more efficiently applied in single-story factories which have been specifically designed for the purpose. Thus, space utilization tends to be more efficient and factories of smaller size.

When the myriad of special purpose production machines, each tended by a single worker, is replaced by a single, huge, multi-purpose, punch card or tape controlled machine, communication between workers and the formation of work groups becomes more difficult. At least one British union, for

example, has already asked for "lonesome pay" for workers overseeing automated processes. Trade union solidarity is fostered, at least in part, by the intimate relationships between workers thrown closely together in the workplace and by the development among them of common perceptions of their divorcement from management. With fewer workers in a given plant, and with these workers spatially isolated from each other, the corporation can exercise far greater social control over its workers. The works manager, presumably, can know all the men personally, and the spatial and social integration of workers in a non-automated factory may be replaced by a spatial and social integration of workers with supervisors. Under these conditions, a new kind of trade union identification may occur and a new kind of company town may be in the making.

The decentralization of industry may equally revolutionize the social topography of the country as a whole. As new plants are built on the outskirts of towns and as workers come to live along the fringes of the spreading city, the distinction between urban and suburban becomes increasingly obliterated.

But more than topographical changes are involved. Bell suggests that under automation, depreciation becomes the major cost. Labor is cheap in relation to the tremendous cost of an automated machine. Workers can be laid off when they become unproductive, but it is enormously expensive to permit the machine to be idle. To write off the big capital investment, more and more of the automated plants may expand shift operations in order to keep the plant running 24 hours a day. And so more and more workers may find themselves working odd hours. When this occurs, the cycles of sleeping, eating, and working, and social life become distorted. A man on the regular eight-to-four shift follows a cycle of work, recreation, and sleep, whereas during the same day the fellow on the four-to-twelve shift is on a cycle of recreation, work, and sleep, and the night man goes to bed around mid-morning, gets his recreation in the late afternoon and early evening, and goes to work at midnight. Where workers alternate these routines, friendship patterns change sharply. When the wife and children follow a "normal" routine while the man sleeps through the day, home life becomes disjointed.

It is often said that the era of automation represents a "second industrial revolution" in the sense that a computer or a feedback-controlled transfer machine takes from man the necessity that he use his brain, or a good part of it, in his work, just as the first industrial revolution, ushered in by the power-driven machine, represented an extension of man's muscle power. But whatever the degrading effects, workers who use power-driven tools do use them, in a sense, as an extension of their own bodies. The machine responds to the worker's commands and adds new dexterity and power to his own muscle skills. But as a button pusher on an automated machine, a man now stands outside his work and whatever control existed is finally shattered. Restricting output, for example, becomes a very difficult, if not impossible, thing to do.

An oilworker simply cannot slow down a cracking tower in order to get some satisfaction from the "boss." There is very little, if anything, the man who tends the huge broach in the Cleveland engine plant of Ford can do to affect the operation of that machine. A modern continuous tin mill operates almost wholly independently of the worker who watches lights, dials, gauges, perhaps a television picture tube or a spectroscope. In operations of this kind, muscular fatigue is replaced by mental tension, the interminable watching, the endless concentration.

A single instance may give some clue to this problem. The *New York Post* reported the experiences of a Ford worker:

> Then there are workers who can't keep up with automation. Such as Stanley Tylack. Tylack, 61 and for 27 years a job setter at Ford, was shifted from the River Rouge Foundry machine shop to the new automated engine plant. He was given a chance to work at a big new automatic machine. Simply, straightforwardly, he told his story: "The machine had about 80 drills and 22 blocks going through. You had to watch all the time. Every few minutes you had to watch to see everything was all right. And the machines had so many lights and switches — about 90 lights. It sure is hard on your mind. If there's one break in the machine the whole line breaks down. But sometimes you make a little mistake, and it's no good for you, no good for the foreman, no good for the company, no good for the union." And so Stanley Tylack, baffled by the machine he couldn't keep up with, had to take another job — at lower pay.[13]

[13] Cited in *Automation and Technological Change,* Hearings before the Subcommittee on Economic Stabilization of the Joint Committee on the Economic Report, 84th Congress, 1st Session (Washington: U. S. Government Printing Office, 1955), p. 103.

Mr. Tylack's experience suggests, of course, that the tedium of routine tasks may be preferred by some workers. It also suggests that we may not yet know what kind of skills, experience, personality, and similar worker attributes are required to operate the new machines. It seems clear that a skilled tool and die maker who, by virtue of his high skills and seniority, is entitled to take a dial watcher's job may not possess the psychological requirements of that job at all. But this need not be a problem in an age of automation since the machine tender and dial and light watcher can be replaced by other machines, and this is happening very quickly.

Here is where there may be a real social gain for these new processes. Diebold and Drucker have pointed out that automation requires workers who can think of the plant as a whole. It requires engineers and designers who have an over-view of the entire process which the factory is intended to perform. The locus of attention is shifted from the machine to the whole plant and the individual "cut-and-fit" method of production gives way to a continuous-flow process which eliminates the contribution of the machine tender or batch mixer. There is left, on the one hand, the unskilled worker, the broom pusher, whose job may be too menial to automate and, on the other the highly skilled worker who designs, constructs, repairs, and programs the machine. There is less trivialization, less minute specialization of function and a need to know more about more than one job. There is a need for highly trained technical personnel who are

able to see the process as a whole and who can conceive of the factory — not the machine or the individual worker — as the unit of production. Workers who can link the programmer with the lathe, the computer with the consumer, the sand pile with the casting, and the pipeline with the gasoline storage tank become the foremost need. It becomes necessary to know the drill and the finish grinder and to relate their jobs to each other.

The skills required in this new setting are altogether of a different order than before. The increased professionalization required by automation suggests that some of the loss of status attending earlier technological changes may be regained. Thus, there may be in the making a reversal of the historic trend toward ever greater specialization of function with its trivialization of work, and the reintegration of labor may begin to emerge.

Also very important may be the elimination of systems of work measurement in manufacturing and data processing. Modern industry, says Bell, began not with the factory but with the measurement of work. But under automation, with continuous flow, a worker's worth can no longer be evaluated in production units. Wage incentive plans are based on the premise that human worth at the workplace can and should be measured by the number of units produced. It is reasoned that under the unit worth concept, workers would produce more units for more money and there would be no limit to production if pay were made proportional to output. But with automation the human worker will be concerned with nonsystematic work activity and will stand outside direct production activity. Highly skilled workers will be more concerned with adapting the production system to special situations, and this is an activity whose value can be measured neither by production units nor by time units.[14] Hence, incentive plans, with their involved measurement techniques, may vanish. Abruzzi suggests that a new work morality may arise in place of a morality based on a unit-worth concept. The "one best way" definition of worker worth will give way, the stop watch and the slide rule will disappear as instruments for the measurement of worth, and fractionalized time or production units will no longer be useful measures. Worth will be judged on the basis of organization and planning and the continuously smooth functioning of the operation. The individual worker loses his importance and is replaced by the team, and greater value is placed on the operating unit as a whole. Whyte's *The Organization Man* may indeed replace the traditional individualism which has characterized American society for so long.

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[14] Adam Abruzzi, *Work, Workers, and Work Measurement* (New York: Columbia University Press, 1956), p. 297.

Inventory Cycles and Their Relationship to Distribution

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MANAGEMENT'S DECISIONS concerning inventories have come to be recognized as one of the major determinants of change in the level of production and employment. To be sure, the underlying causes of fluctuations in production and employment are usually complex and sometimes obscure. But it is generally agreed that business spending for inventories has an important bearing on the dimensions of these movements. In view of the continued upward movement in aggregate stocks since 1954, inventory behavior and the management thinking responsible for it seems to be a subject of some significance at the present time. Of particular interest, because of its possible implications for the current business expansion, is the matter of inventory cycles and the circumstances which initiate them.

The Significance of Inventories in Business Cycles

In a pioneering study of inventory behavior by the National Bureau of Economic Research, it was concluded that during the two interwar decades (1919-38) inventory investment constituted one of the most volatile types of business spending in the economy.[1] Data that would permit a comparable analysis of the postwar period are of course not yet available. However, national income statistics do seem to reveal that business outlays for inventories have continued to be an important factor contributing to cyclical swings in total output.

A composite picture of the changes in total production during the four business cycles which occurred from March, 1933, to August, 1954, is presented in Table 1.[2] It may be observed that the average fluctuation in total product during this period was slightly more than $57 billion (1947 dollars). About 17 percent of this amount ap-

[1] M. Abramovitz, *Inventories and Business Cycles* (New York: National Bureau of Economic Research, 1950).

[2] For the most part, the technique used here follows that used in the Abramovitz study. The figures in each column represent averages over four full cycles. Column 2, which refers to change during business expansion, shows the average differences between the value in trough years and that in succeeding peak years of each component of the gross national product. Column 3, change during business contractions, shows the average differences between the value of each component in peak years and that in succeeding trough years. Column 4, which pertains to change during the full cycle, shows the average differences between the changes during expansion and those during contraction for each component of total output.

The trough and peak years which mark the contraction and expansion phases of the cycles are those selected by the National Bureau of Economic Research as the years in which business at large reached its highest and lowest levels in successive fluctuations. The terminal dates of these cycles are March, 1933-June, 1938; June, 1938-October, 1945; October, 1945-October, 1949; October, 1949-August, 1954.

Table 1. Average Changes in Gross National Product and Its Major Components, Four Business Cycles, 1933-54

Item	Average annual value (Billions of 1947 dollars) (1)	Change in billions of 1947 dollars			Change as percentage of change in gross national product		
		Expansion (2)	Contraction (3)	Cycle (4)	Expansion (5)	Contraction (6)	Cycle (7)
Gross national product	209.7	52.3	−4.8	57.1	100.0	100.0	100.0
Personal consumption expenditure	140.0	26.3	0.8	25.5	50.3	−16.7	44.7
Durables	15.2	5.2	−0.4	5.6	9.9	8.3	9.8
Nondurables	79.8	13.0	0.7	12.3	24.9	−14.6	21.5
Services	45.1	8.1	0.5	7.6	15.5	−10.4	13.3
Gross private domestic investment	22.8	14.3	−6.3	20.6	27.3	131.2	36.1
New construction	10.6	4.1	0.1	4.0	7.8	−2.1	7.0
Nonfarm residential	5.1	1.9	0.3	1.6	3.6	−6.2	2.8
Other	5.4	2.2	−0.2	2.4	4.2	4.2	4.2
Producers' durable equipment	10.5	5.2	−1.6	6.8	9.9	33.3	11.9
Change in business inventories	1.9	5.1	−4.8	9.9	9.7	100.0	17.3
Farm	0.0	1.0	−1.2	2.2	1.9	25.0	3.8
Manufacturing	0.9	2.3	−2.2	4.5	4.4	45.8	7.9
Wholesale	0.2	0.7	−0.4	1.1	1.3	8.3	1.9
Retail	0.4	0.8	−0.6	1.4	1.5	12.5	2.4

Sources: National Bureau of Economic Research; Department of Commerce, *Survey of Current Business*, *National Income Supplement*, 1954 edition, pp. 216-17. Percentages are derived from dollar estimates.

parently took the form of change in the rate of spending for business inventories.

The importance of this change in the inventory component can perhaps be more fully appreciated by comparing it with the amount of change in the other categories of gross private domestic investment. During expansions in general business, for example, the increase in inventories was greater by $1 billion than the increase in value of new construction, and it was only $100 million less than the increase in purchases of producers' durable equipment. During contractions, change in the rate of inventory liquidation has been the largest single element of the average decline in total output. Indeed, the average over-all inventory disinvestment per cycle exceeded by $3.2 billion the average amount of contraction in the next largest component of total product.

Changes in the value of stocks held by manufacturers during these four cycles appear to have made the greatest contribution to average change in total inventory investment. The amount of change in manufacturing inventories is impressive when compared with the average change in total output. Whereas inventory accumulation by manufacturers amounted to only 4.4 percent of the average increase in total product during business expansions, inventory liquidation by manufacturers

amounted to nearly one-half of the average decline in total product during business contractions.

The real significance of the inventory factor in the expansion and contraction of total product is not so much in the amount of the change in inventory investment as in the volatility of it. This characteristic of inventory investment can be best illustrated by comparing the average annual value of each of the components of total output with its average cyclical change. Presumably, the more stable the category the larger would be its average annual value relative to its average cyclical value. The more volatile the category the smaller would be its average annual value as compared with its average cyclical value. If the average annual and the average cyclical values of each component are expressed as percentages of total output, the following comparisons are obtained.

	Average annual value as a percent of average annual value of GNP	Average cyclical change as a percent of average cyclical change in GNP
Personal consumption expenditures		
Durables	7.2	9.8
Nondurables	38.1	21.5
Services	21.5	13.3
Gross private domestic investment		
New construction	5.1	7.0
Producers' durable equipment	5.0	11.9
Change in business inventories	.9	17.3

On the basis of this comparison, it is evident that business investment in inventories is subject to conspicuously greater variation than any other major component of total output. The disparity between average annual value and average cyclical change is far greater for inventories than for any of the other components. Reference to Table 1 reveals that much of this fluctuation apparently occurred during business contractions. Whereas average inventory accumulation amounted to about 10 percent of the average increase in GNP during business expansions, inventory liquidation, on the average, amounted to 100 percent of the decline in total output during contractions.[3]

An inspection of columns 1 and 7 of Table 1 also discloses that changes within the category of business inventories have been more volatile in every instance than were the changes within any of the other major components of total product. In the case of manufacturing inventories, for example, the average annual change in inventory spending was only four-tenths of 1 percent of the average annual value of

[3] This somewhat startling disclosure may be explained by the fact that in general the last two decades have been periods of steadily increasing business activity. Contractions, when they did occur, were more in the nature of slowdowns in the pace of this activity than of reversals in its general direction. In consequence, some components of total output have continued to increase, albeit at a decreasing rate, even during periods of cyclical contraction. Personal consumption expenditure for nondurables and services, for example, showed an average increase of $700 million and $500 million respectively during four periods of contraction. New nonfarm residential construction also increased some $300 million on the average during the course of four contractions.

total product whereas the average full cycle change was roughly 8 percent of average cyclical change in GNP. In the case of retail inventories, average annual change was less than two-tenths of 1 percent of the average annual value of GNP as compared with an average full cycle change which was 2.4 percent of average cyclical change in GNP.

Even though annual estimates such as those upon which this analysis has been based are admittedly crude, they nevertheless appear sufficiently accurate to establish at least a few conclusions. The first is that change in business outlays for inventories has continued to be the most unstable and volatile type of spending in the economy. A second is that violent fluctuations in the value of goods added to and subtracted from inventories appears to have occurred at all levels of the distribution system. A third is that conditions responsible for such cyclical variation in inventories must have considerable economic significance.

Causal Factors in Inventory Behavior

To some degree of course, fluctuations in inventories are the result of fluctuations in the volume of sales. But even though movements in sales may explain the direction of movements in stocks, they are not sufficient to explain either the amplitude or the timing of these movements. For the most part, attempts to explain the violence of inventory fluctuations tend to be oriented about two major factors: (1) the ratio of inventory to sales (or output) which management endeavors to maintain, and (2) the success with which these planned ratios are achieved in practice.

It is generally agreed that decisions concerning inventory-sales (or output) ratios are typically influenced by such variables as the delivery time required by suppliers, available storage facilities, interest rates, and conditions of supply. An element of particular significance both in the determination of desired ratios and in the success with which they are achieved is the estimate of what customers will want to buy. Without an estimate of demand, there can be no basis on which to determine overall inventory requirements or to formulate suitable goals. Yet, with the exception of items for which there are specific and guaranteed orders, predictions of demand are inherently suspect and uncertain. It is well-nigh inevitable, therefore, that involuntary departures from inventory goals will be frequent.

The corrective reactions of business firms to unplanned movements in inventories are usually presumed to take the form of changes in the rate of purchasing. If change in the rate of business purchasing is pronounced, it may of course have a considerable repercussion on the level of employment and income. Indeed, it can be shown that the increase or curtailment of output resulting from inventory adjustments can be sufficient to effect fluctuations in total demand.[4] Changes in demand in turn effect changes in stocks by some multiple, the exact value of which

[4] L. A. Metzler, "The Nature and Stability of Inventory Cycles," *Review of Economic Statistics*, August, 1941, pp. 113-29.

Table 2. Flow of Commodities to Consumers, Department of Commerce Bench-marks

Sales to consumers by:	1939		1947	
	Dollars (millions)	Percent of total sales	Dollars (millions)	Percent of total sales
Producers	1,095	3.17	3,346	3.59
Wholesalers	882	2.55	1,325	1.43
Retailers	32,561	94.28	88,580	94.98
Total	34,538	100.00	93,251	100.00

Source: Department of Commerce, *Survey of Current Business, National Income Supplement*, 1954 edition, pp. 106 and 111.

would be determined by the average ratio of stocks to sales which businessmen are in fact able to maintain.

It seems to follow from this explanation that it is fundamentally the inaccuracies of sales predictions and the resulting departures of inventories from target ratios which together "trigger" inventory cycles. But where in the distribution system is this triggering action most likely to occur? There is of course such an interdependence of activity throughout the distribution system that any change in the flow of goods at one level will almost invariably be transmitted to other levels. But there is little empirical evidence to indicate the source from which waves of inventory accumulation and liquidation develop. Nevertheless, it appears reasonable to speculate that cyclical fluctuations in aggregate stocks originate primarily in conditions prevailing in retail trade.

The Strategic Position of the Retailer

It can be observed in Table 1 that from the standpoint of the value of goods involved, consumer expenditure for nondurables represents the most important single component of change in gross national product. If to this change is added the amount of change in consumer expenditure for durables, it is evident that average cyclical change in the flow of goods to consumers amounted to approximately $18 billion. This figure represents nearly one-third of the average cyclical change in total output during the 1933-54 period. Undoubtedly, the major portion of the goods represented by these expenditures pass to consumers through retail outlets. Indeed, on the basis of bench-marks developed by the Department of Commerce in 1939 and again in 1947, approximately 95 percent of total consumer purchases are customarily made at retail outlets (see Table 2).

It appears to be the retailer, then, who bears virtually the full initial impact of swings in personal consumption expenditures. This circumstance has two important implications. One is that in a sense the retailer tends to become the bellwether of the distribution system. The other is that the maintenance of balanced inventories by retailers is evidently a difficult and precarious task. It is conceivable that together these factors could exert a considerable influence on the timing of movements in aggregate inventories.

Although changes in employment and income are of fundamental significance, it is the resulting behavior of consumer expenditures which reveals what the economic impact of these changes is likely to be. Since the major part of consumer spending is done in retail stores, changes in retail sales provide the first indication as to how severely changes in income are likely to affect sales of manufacturers and wholesalers. Yet for the individual manufacturer or wholesaler, the flow of goods across retail counters is a difficult measure to interpret. During any given time period, the amount of goods passing into the hands of consumers may bear slight resemblance to the flow of retail orders to suppliers.

The disparity between retail sales and retail orders is implicit in the nature of the retailing operation. It is not consumer purchases, of course, which are transmitted by retailers to wholesalers and manufacturers, but anticipations of these purchases. Since these anticipations are typically based on short-run forecasts, they are undoubtedly influenced by the pessimism and optimism of the moment — both of which are potentially cumulative.[5] Then, too, the practicalities of buying give rise to considerations which modify and condition the volume of orders placed in response to anticipated sales. The length of the delivery period, price expectations, conditions of supply, the availability of credit, and the objectives of inventory policy itself all intervene between retailers' anticipations and the volume of orders they place on the basis of these anticipations.

Apart from the vagaries of consumer behavior, common sense seems to suggest that the uncertain relationship between consumer demand and retailer demand is an important factor rendering sales forecasting by manufacturers precarious. This seems to be very evident in the case of consumer goods manufacturers. To the manufacturer of industrial goods, who must think even more in terms of derived demand, the impact upon sales of variations in the flow of retail orders seems to be much more difficult to predict. And even in the short run, the sale of industrial goods is strongly conditioned by the flow of merchandise to retailers.

Added to the acute problem of forecasting experienced by manufacturers and wholesalers is the equally acute problem of forecasting faced by the retailer himself. Even though the cyclical changes in consumer spending are small in comparison with the average annual value of this component of total product, they are still substantial in terms of dollars. The retail operation is geared to selling rather than to storage, and a large part of the merchandise carried is of a perishable nature. In consequence, any miscalculation on the part of the retailer regarding consumer demand is apt to be accompanied by an immediate and drastic inventory adjustment.

Overoptimism with respect to consumer demand, apprehensions concerning the availability of merchandise (a lengthening of the delivery period),

[5] A management survey of large department and specialty stores conducted by the author in 1955 revealed that the typical planning period in this type of store was 90 days.

expectations of rising prices, and lack of a firm policy with regard to inventory levels all tend inevitably to promote heavy retail buying and accelerated inventory accumulation. The degree to which these anticipations and apprehensions are in error or fail to offset each other tends to determine the severity of the subsequent inventory adjustment. Since the retailer must bear nearly the full initial impact of changes in consumer attitudes, preferences, and willingness to spend, the likelihood of error is considerable. Consequently, the likelihood of substantial and unpredictable inventory adjustments at the retail level is also considerable.

It is necessary for the retailer to schedule his buying so that he will not be caught out-of-stock during upswings in consumer expenditure or left with too much stock during downswings, for either situation spells loss of sales and profits. If the retailer discovers that he is underbought, he must place heavy orders to correct the condition before the selling season begins to wane. If, on the other hand, he discovers that he has overbought, he must cut back purchases in order to reduce his surplus stock. The sensitivity of retail stocks to changes in consumer demand produces a tendency for miscalculations to be passed back to suppliers in the form of drastically inflated or sharply curtailed purchase commitments. A sharp increase in retail orders for example has the effect of lowering suppliers' inventory levels as sales increase relative to their own purchase commitments. Any sharp cutback in retail orders, on the other hand, has the effect of raising suppliers' inventory levels as their own purchase commitments come due in the face of declining sales.

Conclusion

Conditions at the retail level have a kind of double-barreled impact on the management of inventories at other levels in the distribution system. The uncertain relationship between retail orders and consumer demand serves to compound the problem of forecasting faced by wholesalers and particularly by manufacturers. The imponderables of consumer behavior with which the retail merchant is obliged to deal render it almost inevitable that his own predictions of consumer demand will be somewhat wide of the mark. The magnitude of cyclical swings in consumer spending implies that miscalculations concerning consumer demand and subsequent inventory adjustment at the retail level may be substantial.

The tendency for changes at one level of the distribution system to be transmitted to other levels with multiple effect has of course been recognized for some time.[6] This tendency has special significance in view of the nature of the retailing operation and the retailer's strategic position in the channel of distribution. If consumption is the end of production, then the predominate flow of purchase orders must

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[6] J. M. Clark, "Business Acceleration and the Law of Demand: A Technical Factor in Economic Cycles," *Journal of Political Economy*, March, 1917, pp. 217-35. For a more recent interpretation see R. P. Mack, "The Process of Capital Formation in Inventories and the Vertical Propagation of Business Cycles," *Review of Economics and Statistics*, August, 1953, pp. 181-98.

be from the retailer back to manufacturers of consumer and industrial goods. Manufacturers and distributors can successfully predict their inventory requirements only to the degree that they can predict this flow of orders. The nature of this flow, its fits, jerks, and interruptions, is fundamentally determined by the patterns and systems of inventory management followed by the retailer. Retail merchandising statistics and related economic data may only befog the forecaster.

It seems reasonable, therefore, to suggest that the inventory policies and practices of the retailer may constitute the real triggering mechanism of cycles in aggregate inventories. But retail inventory policies are the progeny of retail management thinking. Whether inadvertent or deliberate, the accumulation and liquidation of retail stocks are the result of management decisions. Consequently, the specific causes of inventory fluctuations seem to lie not in economic conditions alone, but also in the concepts and attitudes which shape management's reaction to these conditions.

One may reason from this position that the problem of inventory cycles is at least in some degree a problem of management — particularly retail management. If it is in the management function that inventory cycles may in part originate, then it is here that further investigation should prove fruitful and stimulating. A lasting solution to a problem can rarely be formulated until all of its probable causes have been clearly identified.

Point IV in Literary Perspective

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THEORIES about the possibility of inducing economic, social, and political progress in a so-called "underdeveloped" economy cover a very wide range. At one extreme, there is the optimistic notion that merely exposing a few leaders to the wonders of Western civilization will lead to such a great desire for improvement in living standards that all changes in social arrangements necessary to achieve progress will automatically follow. At the other extreme, one finds the pessimistic view that the barriers to change in many "non-Western" countries are so great that no outside help, either in the form of technical assistance or supply of capital, will be sufficient to achieve a break-through to a self-generating development along Western lines.

Since President Truman initiated the Point Four program in 1950, the United States government has been committed to a policy of technical assistance to underdeveloped economies. Under the auspices of this program many American experts have ventured forth to enlighten "backward" people about modern technology and to assist them in reorganizing their ways of doing things along Western and more efficient lines. Some of these experts who started with high hopes of accomplishment have returned bitter and disillusioned; virtually all have concluded that inducing technical progress is more difficult than it might appear to the casual observer. They commonly report that they have been suspected of having evil purposes or of having offered foolish or irrelevant assistance.

Why should there be such difficulties when the way to riches has been so clearly marked out by the American economy? What barriers stand between the demonstration of "superior" techniques and the wholehearted adoption of those techniques by people of non-Western cultures?

Mark Twain in 1899 addressed himself to these questions of economic development. His book *A Connecticut Yankee in King Arthur's Court* reads today like an allegorical account of the situations met by Point Four administrators. In it he develops insights which find interesting echoes in contemporary criticisms of technical assistance programs. It may be that the puzzlings of this giant of American literature will suggest new appraisals of the problems in accelerating progress.

I.

A Connecticut Yankee in King Arthur's Court is about a nineteenth-century factory foreman from Hartford who unaccountably found himself in sixth-century England. To save himself from execution, he performed a "miracle" by successfully predicting a total

* The author wishes to acknowledge that the relevance of Mark Twain's writing to this subject was first called to his attention by Dean Harold W. Stoke of New York University.

eclipse of the sun. This led to his selection for the extraordinary role of "The Boss" in King Arthur's court. The Yankee aimed to achieve the pattern of Hartford for the people of Camelot, to reproduce the conditions of the nineteenth century and superimpose them upon the sixth. The grand strategy for achieving this goal was laid out in three stages: first, to demonstrate the "noble civilization" of the nineteenth century; second, to elevate the people to "revolution grade"; and third, to overthrow the monarchy and the established religion and substitute universal suffrage and religious freedom.

This strategy was based upon careful diagnosis of the problem. He wrote,

> I saw that I was just another Robinson Crusoe cast away on an uninhabited island, with no society but some more or less tame animals, and if I wanted to make life bearable I must do as he did — invent, contrive, create, reorganize things; set brain and hand to work, and keep them busy. Well, that was in my line.

He was awed by the stability of the social complex built on mass poverty and ignorance and dominated by an aristocracy and clergy vested with interest, but with no other observable qualification. Serfs and freemen alike were held in a peculiar bondage by an intricate system of social inferiority to their exploiting "betters," a system enforced by a "Reign of Terror" which was fully justified in the eyes of all. He characterized the nation as "a body [that] was in the world for one object, and only one: to grovel before king and Church and noble." "They were nothing but rabbits," who cheerfully supported the institutions that held them in bondage.

> The painful thing observable about all this business was the alacrity with which this oppressed community had turned their cruel hands against their own class in the interest of the common oppressor. People seemed to feel that in a quarrel between a person of their own class and his lord, it was the natural and proper and rightful thing for the poor devil's whole caste to side with the master and fight his battle for him, without ever stopping to inquire into the rights or wrongs of the matter.

The Yankee early came to fear that organized and established religion was a fundamental barrier to progress.

> In two or three little centuries [the Church] had converted a nation of men to a nation of worms. Before the days of the Church's supremacy in the world, men were men, and held their heads up, and had a man's pride and spirit and independence; and what of greatness and position a person got, he got mainly by achievement, not by birth. But then the Church came to the front, with an ax to grind; and she was wise, subtle, and knew more than one way to skin a cat — or a nation; she invented "divine right of things," and propped it all around, brick by brick, with the Beatitudes — wrenching them from their good purpose to make them fortify an evil one; she preached (to the commoner) . . . patience, meanness of spirit, non-resistance under oppression; and she introduced heritable ranks and aristocracies, and taught all the Christian populations of the earth to bow down to them and worship them.

In this situation, the Connecticut Yankee discovered the difficulty of communicating across competing value systems. Thus, the delusions of Alisande, his lady fair, occasioned this comment:

> Here she was, as sane a person as the kingdom could produce; and yet, from my point of view she was acting like a crazy woman. My land, the power of training: of influence: of education: It can bring

a body up to believe anything. I had to put myself in Sandy's place to realize that she was not a lunatic. Yes, and put her in mine, to demonstrate how easy it is to seem a lunatic to a person who has not been taught as you have been taught.

He made similar observations as regards morality and humor and other parts of the Arthurian behavior pattern. Their ideas "flowed in ruts worn deep by time and habit, and the man who should have proposed to divert them by reason and argument would have had a long contract on his hands."

There were difficulties in communicating an appreciation of the values he brought because he was an alien.

The way I was looked upon was odd, but it was natural. You know how the keeper and the public regard the elephant in the menagerie: well, that is the idea. They are full of admiration of his vast bulk and of his prodigious strength; they speak with pride of the fact that he can do a hundred marvels which are far and away beyond their own powers; and they speak with the same pride of the fact that in his wrath he is able to drive a thousand men before him. But does that make him one of *them?* No; the raggedest tramp in the pit would smile at the idea. . . . Well, to the king, the nobles, and all down the nation, down to the very slaves and tramps, I was just that kind of an elephant, and nothing more. I was admired, also feared; but it was as an animal is admired and feared. The animal is not reverenced, neither was I; I was not even respected.

The Yankee concluded that hopes for permanent progress rested on his ability to subvert the institutions of aristocracy and established religion. He hoped that he could rally the support of the people behind a program of progressive change, but he feared that the very imagination of the people was dead.

When you can say that of a man, he has struck bottom, I reckon; there is no lower deep for him. I rather wished I had gone some other road. This was not the sort of experience for a statesman to encounter who was planning out a peaceful revolution in his mind. For it could not help bringing up the unget-aroundable fact that, all gentle cant and philosophizing to the contrary notwithstanding, no people in the world ever did achieve their freedom by goody-goody talk and moral suasion: it being immutable law that all revolutions that will succeed must *begin* in blood, whatever may answer afterward. If history teaches anything, it teaches that. What this folk needed, then, was a Reign of Terror and a guillotine, and I was the wrong man for them.

The Yankee opened his program for reform on the technical front.

. . . the first thing you want in a new country is a patent office; then work up your school system; and after that, out with your paper.

He started a Teacher factory and a Man factory and instituted sectarian division in religion, all of which were aimed at releasing likely candidates from their rigid value set. He built factories and a communications system, all of which were kept secret for some time for fear of arousing hostility before he was prepared to meet it. He introduced scientific, military, and naval training, monetary and fiscal reforms, and advertising. He thought up new ways, including baseball, to use the energies of chivalrous knights-errant, and sent out confidential agents to undermine the whole institution of knighthood. He took advantage of a tournament challenge to discredit knight-errantry, after which he moved his development program into high

gear and into the full view of the people.

Just when the Yankee had concluded that the demonstration phase of his program was successful and had begun to think that the ultimate aims of the development program were almost within his reach, the crisis phase which he had believed inevitable came upon him unexpectedly and before he had prepared the ground. The nobles set to quarreling among themselves and in the ensuing crisis the Church moved onto the offensive against the Yankee and his "progress." There had not been sufficient time to free the people from "superstition and fear," and driven by fear of the Interdict of the Church, the people, including all but 54 boys under 17 years of age, joined the nobility in turning on the Yankee. In a showdown effort to free the people from their "slaveholders," the Yankee was forced to destroy the factories, his own source of power, lest they be used against him. The handful of those loyal to the Yankee were suffocated by the poisonous stench of the bodies of nobles slaughtered in the battle for liberation. Significantly, Merlin the Magician, the symbol of all that was craven and deceitful in the Dark Ages, administered the *coup de grâce* to the Yankee. Thus the Yankee's republic, in which he had proclaimed, ". . . all men are become exactly equal; they are upon one common level, and religion is free," was swept away.

II.

It seems clear that in this book Mark Twain was attempting to state a problem and puzzle out answers in the theory of social change.[1] In many of his books, including *Innocents Abroad* and *Huckleberry Finn,* Twain remarked upon the social pressures to conform and the relativity of ethical principles. Thus, we might assert that, although his mood changed, as Parrington noted, from that of "a simple child, puzzled at life" to that of a man dominated

[1] As with most allegories, *The Connecticut Yankee* is subject to alternative explanations, and it seems that there are at least two other themes which Twain may have had in mind. He may have intended to reaffirm, by way of dramatic contrast, the faith of the Enlightenment in the importance of freedom and rationality, and to expose the depravity of authoritarian and prescientific institutions glossed by the aristocratic romanticism of Sir Walter Scott and others. Twain himself lends support to this view. In 1906, seven years after its publication, he wrote of the book, "I think I was purposing to contrast that English life of the whole of the Middle Ages, with the life of modern Christendom and modern civilization — to the advantage of the latter, of course."

On the other hand, it seems that Twain also intended it to be an indictment of the easy hopes, the smug optimism, of a generation that believed in automatic progress and the inevitability of a "religion of democracy." This interpretation was offered by Vernon L. Parrington in his *Main Currents in American Thought,* Vol. 3, *The Beginnings of Critical Realism in America* (New York: Harcourt, Brace and Company, 1930), pp. 91-98. He saw the book as one which ". . . cuts deep into all civilizations, for all alike are sham, all have issued from the conquest of man's native intelligence by his superstitions that are too useful to his masters to be dissipated." Parrington buttresses his argument for this interpretation by referring to writings of what we might term Twain's "black period," including *The Prince and The Pauper, Joan of Arc,* and *The Mysterious Stranger,* all of which dwell on the irrationality of man, his blind conformity and witless loyalty to self-contradictory and self-destructive institutions.

by a "mechanistic pessimism," his fundamental questioning of social patterns and processes constitutes a continuing thread throughout his lifework. His questioning in *The Connecticut Yankee* might be paraphrased as follows: In view of the fundamental irrationality of man and his apparent eagerness to be enslaved, how is a free, progressive society possible? It is likely that if Twain were writing today, with another half-century of man's story in retrospect, he might ask the question even more insistently.

Bernard De Voto asserts that "Artists are the least analytical of men and he [Twain] was the least analytical of artists. He had no gift for disentangling social, economic and historical energies; what he knew about was the motives and especially the weaknesses and cruelties of mankind, of men as men."[2] While one may agree with that, it still seems plausible that the book draws a hypothesis concerning social phenomena, and it is one that is currently echoed in the learned journals of social science. Gladys Carmen Bellamy, in her recent book *Mark Twain as a Literary Artist,* suggests that ". . . the book may conceivably be viewed as a fictional working out of the idea that a too-quick civilization breeds disaster. In brief, civilization must be organic. It must come from within the people themselves; it cannot be imposed upon them from without."[3] Twain developed the same theme in a short story he wrote in 1878 under the title "The Great Revolution in Pitcairn."

Twain is not clear as regards his theory of change and has no answer as to how societies ever gain release from the deterministic cycle which the Yankee failed to break. His message, though muddied up with what De Voto appropriately terms a "sophomoric determinism," is quite distinct from the Marxist doctrine, and is best classified as an idealistic theory of history. As Parrington puts it, Twain affirmed that "If men were only honest realists — that is, if they were men and not credulous fools — how quickly the stables might be cleansed and life become decent and humane. If only the good brains could be segregated and trained in a 'man-factory', the history of civilization might become something the angels need not weep over as they read it."[4] However, this vision was tempered by the realization that ideas, even such sacred ones as those having to do with the freedom and dignity of the human individual and such significant concepts as the hope of economic progress, were products of specific historical circumstance and were not readily transplantable. He was weighed down by the belief that "the human animal cannot lift himself to heaven by his own bootstraps, and heaven will not stoop to lift him."

III.

To the extent that Twain was concerned with the problem of engineering social change he was dealing with a matter of leading interest for present-

[2] Bernard De Voto, *Introduction to Mark Twain: Mark Twain in Eruption* (New York: Harper and Brothers, 1940), p. xxvii.

[3] Gladys Carmen Bellamy, *Mark Twain as a Literary Artist* (Norman: University of Oklahoma Press, 1951), p. 314.

[4] Parrington, *op. cit.*, p. 95.

day American foreign-policy makers. In the sense that it sketches out the broad nature of the contemporary problem, the *Connecticut Yankee*'s allegory for the times is clear. It is true, of course, that the book does not suggest the full dimensions of this generation's problem. The alternatives open in Twain's story were only two, whereas the denizens of contemporary Camelots face at least three alternatives, namely, the way of the Yankee, indigenous reaction (e.g., as urged by fanatic Moslem groups, or the Hindu Mahasabha, or, perhaps, the Kenya Mau Mau), and Soviet-style communism, or serfdom with tractors. Moreover, Twain made no mention of such complicated and troublesome issues as availability of resources, population "explosions," sources of capital and access to markets, racial and religious antipathies, and the tangled network of international politics.

While it is, thus, a vastly oversimplified statement of the problem, and while Twain never had a course in political science, economics, or sociology, today's reader cannot fail to be impressed by the parallels between his diagnosis and that of sophisticated observers of our Bold New Program for underdeveloped areas. The book underscores the importance of three fundamental insights into the nature of economic development.

First, the problem of development is fundamentally one of inducing changes in ideas and attitudes which are widely shared by a people. Mark Twain might have agreed with a contemporary view that

> Societies, like individuals, unconsciously project their own view of reality, their own problems and what they conceive to be the "solutions" to them, on to others . . . [We have not always understood that] the provision of the framework of economic expansion is in itself insufficient. It was not realized that in the underdeveloped territories the same symbolism and goals of action which were taken for granted in the metropolitan countries could not be relied upon to supply the flesh and blood of individual action to clothe the skeletal framework which "opened up" these areas. . . . Development can be neither foreseen, nor enforced, by any single will — be it the "general will" or the will of a tyrant. It is but the process of evolving patterns of activity . . . as beliefs, aptitudes and hopes change. Foreign investment, like all investment, is but a part of that process. It consists in bring into being new, socially acceptable, patterns of co-operant behavior.[5]

Second, economic development requires "seeing things as others see them," that is, communication across competing value systems. "The real task is not to force change, but to induce it in a manner which will be meaningful to the members of the societies it affects."[6] Arthur Goodfriend, in his convincing book *The Only War We Seek*, concludes that, for a successful aid program,

> . . . we must fuse our material aid with the spiritual background and political aspirations of the people whose democratic allegiance we desire . . . we must explain our goals and actions in words, pictures, sounds, and symbols the least literate can understand . . . defining democracy in terms of *their* religion, history, heroes, literature . . . using *their* communication

[5] S. Herbert Frankel, *Some Conceptual Aspects of International Economic Development of Underdeveloped Territories*, Essays in International Finance, No. 14 (Princeton: Princeton University Press, 1952), pp. 16-20.

[6] *Ibid.*, p. 22.

media . . . so that democracy is *theirs,* not ours alone.[7]

And finally, development is a complicated, long, and disturbing process — a process which creates new tensions as it allays the old. This is necessarily so because of the interrelatedness of social phenomena. A social anthropologist writing of rural India observes, "Rarely does technological change merely add new things; more often, it alters the pattern and the structure of people's lives. It does not just add, but creates a new structure or pattern, and often destroys an old structure or pattern."[8]

[7] Arthur Goodfriend, *The Only War We Seek* (New York: Farrar, Straus and Young, 1951), p. 123.

[8] McKim Marriott, "Technological Change in Overdeveloped Rural Areas," *Economic Development and Cultural Change,* No. 4, December, 1952, p. 261.

Perhaps Mark Twain would have felt a wry satisfaction in knowing that he had, fifty years before, stated a problem which only now is emerging upon the American scene as one urgently in need of practical solution. Perhaps he might have hoped that we would gain from his book a fuller appreciation of the fact that only by perceptive anticipation of resistances to progress, by careful attempts to communicate across competing value systems, and by persistent effort to find ways to induce changes in fundamental ideas and attitudes, all associated with the demonstration of the noble civilization of the twentieth century, can we hope to prevent the fate of Mark Twain's hero from being prophetic for contemporary "Connecticut Yankees."

Current United States Trade Policies*

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FOR THE PAST TEN YEARS there has been almost continuous discussion concerning the policies the United States should pursue with respect to tariffs, foreign trade, and foreign aid. Repeated studies, including two made by high-level commissions, have pointed to the need of liberalizing our trade policy. During the past five years the desire to terminate foreign aid has tended to place additional emphasis on increased trade as a way out.

When the Eisenhower administration took office in 1953 there was general discontent with the existing situation. Willard Thorp, former Assistant Secretary of State for Economic Affairs, summarized the situation in 1953 as one that pleased no one: "Trade is restricted by quotas and embargoes; national currencies are not freely convertible . . . the flow of investment is extremely limited; and foreign aid . . . is still measured in billions . . ."[1] Now, four years later, the situation is much the same. The Administration has pushed for a policy of liberalized trade, but Congress, whether controlled by Republicans or Democrats, has held back. At times the Administration has won, but for the most part the Congress has proved to be the stronger.

Throughout the Eisenhower administration, the United States has continued to reduce tariff rates on a reciprocal basis. One major step in this direction was taken during the past year. Under the authority granted in the Trade Agreements Act, the President issued a proclamation on June 13, 1956, implementing tariff reductions negotiated at the Geneva meetings by representatives of the signatories to the General Agreement on Tariffs and Trade.

Action Under the Escape Clause

A dozen different efforts have been made to persuade President Eisenhower to invoke the "escape clause" in trade agreements and to raise tariff rates on particular commodities which, it was maintained in each case, were being imported in such quantities as to cause injury to domestic industry. In some cases the President has followed the recommendations of the Tariff Commission and rates have been raised. The latest such cases were the increase in the tariff on linen toweling, in June, 1956, and the decision in October, 1956, not to lower the rates on Swiss watches.

President Eisenhower, like his predecessor, President Truman, rejected most of the "escape clause" recommendations made by the Tariff Commission for increasing rates. Two recent cases are of more than passing significance.

On December 10, 1956, he rejected

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* Paper read at the Fifth Institute of International Trade, University of Illinois, June 21, 1957.

[1] Willard L. Thorp, "The Problem of Our Trade Balance," *Foreign Affairs*, Vol. 31 (April, 1953), p. 405.

a Tariff Commission recommendation that tariffs on imported groundfish fillets be raised. The President referred to Iceland, Canada, and Norway in explaining that the recommended higher tariffs would be injurious to "close friends" whose "economic strength is of strategic importance . . . in the continuing struggle against . . . world communism." The reaction to this decision by New England fishermen was bitter. The action would sound the "death knell" of the industry, it was stated.

On January 22, 1957, the President notified the chairmen of the Senate Finance and the House Ways and Means Committees that he was rejecting a Tariff Commission recommendation raising the tariffs on velveteens. He pointed out that Japan, the largest United States supplier, had fixed an annual export limit of 2½ million square yards. On January 16, Japan had agreed to limit cotton exports to the United States to 235 million square yards per annum for a five-year period.

Some circles asserted that the President's action on groundfish marked the end of compromise for the Administration. They pointed out that the decision was a reversal in policy from the President's earlier approval of curbs on the importation of woolen goods and higher tariffs on watches and bicycles.

The Administration has pushed hard for two objectives: the passage of a tariff simplification bill and congressional authorization of United States membership in the Organization for Trade Cooperation.

Tariff Simplification

Aiding in the protection of domestic industries are the uncertainties faced by importers in dealing with the complex United States customs laws. The complexities are of two types: customs lists and customs procedures. Following the request of the President, Congress passed Customs Simplification Acts in 1953 and in 1954. However, neither act provided for the kind of basic revisions desired by American importers or foreign exporters. The 1954 act directed the Tariff Commission to make a study of tariff classifications and report by September 1, 1954. The commission failed to meet its deadline. An interim report was finally filed in March, 1955, but it indicated that the commission would not be able to recommend revision of the customs laws sufficient to eliminate protection through complexities.

On August 2, 1956, H.R. 6040 — the latest Customs Simplification Act — became a law. It makes the sales price to American importers the basis for determining ad valorem duties on imported goods. The President, on signing the measure, said it would do more than "any other single measure to free the importation of merchandise from customs complications and pitfalls for the inexperienced importer."

Organization for Trade Cooperation

Representatives of 35 nations attending the ninth session of the signatories of the General Agreement on Tariffs and Trade (GATT) in Geneva from October 28, 1954, to March 21, 1955, drafted and signed an agreement estab-

lishing the Organization for Trade Cooperation. Such an organization had been proposed by the United States government. The agreement was signed on behalf of the United States by Samuel C. Waugh, Assistant Secretary of State and the head of the American Delegation at the conference.

According to its provisions, the agreement cannot come into effect until accepted by countries accounting for 85 percent of the foreign trade of the GATT signatories. Since the United States accounts for more than 20 percent and the United Kingdom for 18 percent of GATT trade, the OTC agreement must be ratified by both countries before it can become effective.

On April 14, 1955, President Eisenhower urged Congress to authorize United States membership in the Organization for Trade Cooperation. He indicated that American leadership in the organization would be important in developing programs for mutual defense.

In his State of the Union Message on January 5, 1956, the President pointed out that United States membership in OTC would "provide the most effective and expeditious means for removing discrimination and restrictions against American exports and in making our trade agreements truly reciprocal" and "most earnestly" urged Congress to pass authorizing legislation.

In his *Economic Report* to Congress, on January 24, 1956, the President repeated this request; and on May 4, 1956, he opened a press conference by lauding the report of a four-man advisory committee which "strongly" urged United States membership in OTC as "clearly . . . in our enlightened self-interest."[2]

No action was taken by either house, beyond the holding of hearings, during the 84th Congress. Those favoring the principle of "protective tariffs" were able to forestall action.

The American Tariff League led the fight against congressional authorization. On May 6, 1956, the league announced that 488 companies and associations and 16 labor union locals had signed petitions urging Congress to bar United States membership in the OTC and demanding that GATT be submitted to Congress "in accordance with the treaty-making provisions of the Constitution." The petitions stated that OTC membership would impair constitutional rights of petition by subjecting "tariff policy and foreign commerce . . . to determination by an international agency" and would also limit Congress' constitutional powers to tax and to regulate foreign commerce.

President Eisenhower, in his State of the Union Message, January 10, 1957, returned to the battle. He urged the new Congress to pass the authorization for United States membership, pointing out that the action would "speed removal of discrimination against our export trade." The recommendation was repeated in his *Economic Report* of January 23. On April 3, 1957, the President sent a special

[2] The membership of the advisory committee: Elliott V. Bell (McGraw-Hill Publishing Company), Homer L. Brinkley (National Council of Farm Cooperatives), Bryant Essick (Essick Manufacturing Company), and Stanley N. Ruttenberg (Director of Research, AFL-CIO).

message to Congress, in which he emphasized the importance of exports to the American economy and particularly to agriculture. The President pointed out that United States foreign trade policies "are based upon reciprocal trade legislation and agreements that have been negotiated under it. Until we establish the best possible machinery for administration of these agreements, we are needlessly failing to obtain their maximum possible benefits for American labor, industry and agriculture."

H.R. 6630 — authorizing membership in OTC — is still languishing in the House Ways and Means Committee, which has not even considered the legislation. No hearings have been held and none are scheduled. It appears evident that the House of Representatives will not pass the requested legislation in the first session of the 85th Congress. The matter is not yet before the Senate.

It is also evident that the "high tariff" lobby has had a hand in blocking congressional approval of OTC in this session of Congress. Pertinent is an editorial comment in the New York *Herald-Tribune:*

> Some American companies are stopping other United States producers from increasing their export sales. They aren't doing it intentionally. What they really want is to keep foreign companies from selling more goods here. But they have the mistaken notion that they can achieve their objective by preventing the Organization for Trade Cooperation.
>
> Blocking United States membership doesn't help them since the OTC won't be able to raise or lower United States trade barriers. But it does hurt American exporters. The OTC will work to eliminate discriminatory trade practices and the chief victims of these devices are American exporters.
>
> Opponents of OTC use the curious argument that the new organization is bad because it would promote freer trade. It is, of course, true that it will work for freer trade, but what the critics neglect to say is that the chief beneficiaries would be the American producers whose goods would flow more freely into foreign markets.[3]

Policy Since 1947

Surveying the postwar period, one is struck by the fact that the high point in the development and implementation of a liberal foreign economic policy was reached a decade ago. Acting under authority granted in the 1945 Trade Agreements Act, the Truman administration, in the spring of 1947, entered into the first and most important of four multilateral trade negotiations held since the close of World War II. The results of those negotiations were embodied in the General Agreement on Tariffs and Trade.

The GATT contains a set of trade rules which were to be a part of the commercial policy section of the charter of the proposed International Trade Organization. These trade rules were formulated while the tariff rate negotiations were in progress. The GATT was intended to be a stopgap arrangement pending the establishment of the International Trade Organization.

From the high point of 1947, there has followed a series of retrogressive steps — retrogressive in the sense that they are moves away from a liberal economic policy.

(1) In 1948, Congress extended the Trade Agreements Act for one year

[3] April 13, 1957.

only. More important, Congress added the "peril point" amendment. The "peril point" provision requires that before any trade agreement negotiations are begun, the Tariff Commission must report on all affected items as "to the limit to which such modifications, imposition or continuance" of duties may be carried out without "causing or threatening serious injury to the domestic industry producing like or directly competitive articles." Should the executive branch, in its trade negotiations, exceed the limits fixed by the Tariff Commission, the President is required to make a full report to Congress.

The restrictive amendments added in 1948 — including the "peril point" provision — were repealed by the Democratic-controlled Congress in 1949. The act, in much its 1945 version, was extended to 1951.

(2) When the Trade Agreements Act came up for renewal in 1951 the "peril point" provision was reinserted. More important, a tight "escape clause" provision was also added. Congress went even further and declared that the enactment of the renewal should not be construed so as "to determine or indicate the approval or disapproval by the Congress of the Executive Agreement known as the General Agreement on Tariffs and Trade."

It should be noted that the 1951 renewal of the Trade Agreements Act came at a time when the 1947 reductions in tariff rates were beginning to take effect. By that time production in Europe had so improved as to make goods available for export. Competition with United States producers prompted renewed efforts on the part of those wanting a high degree of protection. The result of such activity is clearly discernible in the congressional enactment.

Disillusionment with American trade policies and performance grew as prosperity returned to Europe and as trade expansion became a major objective of the European governments. The principal trading countries of Western Europe considered greater liberalization of United States import policy an indispensable counterpart of any efforts on their part to move toward currency convertibility.

For a time in 1952 and 1953, it appeared that the trend toward increased protection might still be reversed. "Trade, not aid" became a popular slogan in European countries and became a widely adopted goal in the United States. The link between aid and trade was the point of departure for the review of trade policy President Truman requested the Public Advisory Board for Mutual Security to undertake in the spring of 1952. The Board did not report until March, 1953.[4] By that time the White House had changed hands and there was no disposition to shape policy in accordance with recommendations requested by the previous administration. The far-reaching recommendations of the "Bell Report" received virtually no hearing, save for the consideration given it by the academicians and a few editorial writers. It had little or no effect on public opinion at home or abroad.

[4] *Trade and Tariff Policy in the National Interest* (Washington: Government Printing Office, 1953).

There was considerable hope in 1953 that the appointment of the Commission on Economic Foreign Policy (Clarence Randall, chairman), with a broad mandate to review economic foreign policy, would lead to the reestablishment of more liberal trade patterns. This optimism prevailed in spite of the difficulties the Administration was encountering in its efforts to secure renewal of the Trade Agreements Act. The Administration merely asked for a one-year renewal to allow time for the Randall Commission to complete its task; but it found itself in trouble in fending off the adoption of the more restrictive Simpson bill, and was obliged to compromise. The 1951 act was extended but escape clause procedures were further tightened. The period allowed the Tariff Commission for making "escape clause" investigations was reduced from twelve to nine months; recommendations were to be sent to the President if three of the six members of the commission agreed. Previously a majority had been required. The Administration spokesmen found themselves praising the restrictive act of 1951 in their efforts to defeat the Simpson bill.

Had the United States been prepared in 1953 to take some dramatic action in the trade field, a concerted move by the United Kingdom and the other Organization for European Economic Cooperation (OEEC) countries toward convertibility might have materialized. As it was, there resulted a loss of momentum while the Randall Commission completed its studies.

The report of the Randall Commission, in February, 1954,[5] came as a disappointment at home and abroad. But once again there was a willingness to play up its strengths and overlook the clear signs that protectionism had pushed the supporters of liberal economic policies into claiming as victories points which a few years earlier would have been viewed as defeats.[6]

The President's message to Congress at the end of March was closely patterned on the recommendation of the Randall Commission. He played up the program of the commission as being fully consistent with the new economic foreign policy that the world had been led to expect. But, on the other hand, his assertions of the great importance of higher levels of trade and of the need for the United States to take the initiative in lowering trade barriers were balanced by cautious language obviously designed to reassure the opposition. Acting on the recommendation of the commission, the President requested authority to reduce, in trade agreement negotiations, existing tariff rates on selected commodities by not more than 5 percent in each of three years; to reduce by not more than 50 percent in the three-year period tariffs on goods not being imported or im-

[5] *Report of the Commission on Foreign Economic Policy* (Washington: Government Printing Office, 1954). The Commission, in order to secure unanimity, compromised with the high tariff minority only to have them issue a minority report.

[6] For a critical appraisal of the report by a number of experts, see Klaus Knorr and Garner Patterson, eds., *A Critique of the Randall Commission Report on the United States Foreign Economic Policy* (Princeton: Princeton University, International Finance Section, 1954).

ported in negligible amounts; over a period of three years to reduce to 50 percent ad valorem any rate in excess of that percentage.

The President ruled out any across-the-board tariff reductions. He made it clear that the "peril point" and "escape clause" were to be preserved, and that tariff reductions would be "gradual, selective and careful."[7]

Congress was reluctant to approve even such a modest program, so the Administration indicated its willingness to settle for a one-year extension of the existing Trade Agreements Act.[8]

The Trade Agreements Act was renewed for three years in 1955, but the hearings and the final form of the renewal act gave little reason to suppose that the protectionist tide had yet turned. This fact is further borne out by the manner in which Congress has, in its current session, dealt with the OTC.

Recent European Developments

Two recent developments have implications for United States foreign economic policy. One is the movement toward the European common market and the other is the new Soviet trade policy with respect to the underdeveloped countries.

Much progress has been made by European states in establishing a common market. On March 25, 1957, six states signed an agreement at Rome to move gradually toward a common market. It can be predicted that during the next decade and a half there will be established a customs union binding together France, Germany, Italy, Belgium, the Netherlands, and Luxemburg. There will be an even larger free trade area, comprising the customs union, the United Kindom, and most of the other OEEC countries.

The initiation of the common market and the free trade area scheme means that about one-half of the world's trade will be brought within the purview of institutions to which the United States does not belong and will be conducted according to rules which the United States will have little or no role in shaping. If a mutually advantageous trading relationship is to be developed between the United States and the customs union, and if free trade areas are to be established, certain changes appear to be necessary: The United States must be prepared to reduce tariffs on an across-the-board basis rather than only on a product-by-product basis, as is now the case. We must also recognize that reciprocity consists of many things, not simply tariff reductions.

Also having implications for the United States is the striking increase in trade and payments arrangements concluded by the Soviet Union and the satellite states with underdeveloped countries over the past two years.

The problems of the underdeveloped countries are not seriously or immediately affected by those aspects of American trade policy that cause frustrations to the European states. Our tariffs on raw materials are few and low, and these materials constitute the principal exports of the underdeveloped

[7] For a text of the President's message, see Department of State, *Bulletin,* April 19, 1954, pp. 602-7.

[8] *Ibid.,* May 31, 1954, pp. 841-42.

countries. But the underdeveloped countries are moving toward diversification of production. The objective of United States policy should be to encourage patterns of development resulting in continued growth without setting in motion counterpressures that will make such growth difficult. It makes little sense for the United States to give substantial grants or loans to develop industries which are later put out of business because of United States trade policies.

We will become engaged in a trade battle with the Soviet Union over the underdeveloped areas and our economic policy will be important in determining the outcome.

Conclusion

Although our foreign economic policy has been modified and reshaped to meet the world situation, the main principles on which it rests have remained quite constant. Our trade agreement legislation sanctions tariff reductions only as a means of increasing exports. This policy places particular domestic interests above the general interest.

A more liberal economic foreign policy can be adopted only when there has been a general reappraisal and restatement of the objectives we seek. But there is little or no interest in achieving this. The Bell Report was overtaken by events and the Randall Commission Report was a negotiated document which tried to reconcile irreconcilable positions. There is little reason to believe that a new reexamination would result in anything more than marking time.

It appears that the most that can be expected in the future is the establishment of the Organization for Trade Cooperation and a continuation of attempts to reverse the current trend toward greater protection. But the fact that OTC has failed to move in the current session of the Congress is not reassuring.

Measuring the Distribution of Income: Some Problems and Limitations

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DURING THE PAST FEW YEARS, there has been renewed interest in distributions of income by size. Undoubtedly the chief reason for this interest is that data are now available which go back some distance into the past which are more or less suitable for comparative purposes. Thus, year-by-year changes in income inequality are to some extent discernible, whereas in the past, observations on this matter contained more than a liberal element of speculation. With additional statistics, discussion of inequality becomes both more complicated and more enlightened. Enlightenment, as always, comes from better understanding of the facts. Complications arise in that the statistics themselves become the subject for speculation. Indeed, it will soon become apparent that it is with the latter point that this article is concerned.

Distributions of income by size over time come from three main sources. The Federal Reserve Board, in its Survey of Consumer Finances, has published a distribution of income each year for ten years or more.[1] These findings are based on a sample survey of approximately 3,000 "spending units." Second, the National Bureau of Economic Research has published a study by Simon Kuznets covering the period 1913-48.[2] Based on Federal individual income tax returns, this work shows the shares received by the upper income groups in income and savings on a "per person" basis. A third set of figures, going back to 1935-36, is published by the United States Department of Commerce.[3] *Both* Federal individual income tax returns and survey data are used by the Department of Commerce, along with other available sources of information. Income here is reported on a "family" basis.

Income Inequality

Inequality in the distribution of income can be measured in many different ways. One particularly effective statement of the degree of inequality describes the share of total income going to some given percent of the income receivers at the top of the income range. Information of this sort has been abstracted from the great detail contained in the three sources mentioned and is shown in Table 1 in

[1] The Survey of Consumer Finances is conducted by the Board of Governors of the Federal Reserve System in cooperation with the Survey Research Center of the University of Michigan. See *Federal Reserve Bulletin*, June, 1956, pp. 559-72.

[2] Simon Kuznets, *Shares of Upper Income Groups in Income and Savings* (New York: National Bureau of Economic Research, 1953).

[3] *Income Distribution in the United States by Size, 1944-1950,* U. S. Department of Commerce, Office of Business Economics (Washington: Government Printing Office, 1953). See also Selma I. Goldsmith, "Income Distributions in the United States, 1952-1955," *Survey of Current Business*, June, 1956, pp. 9-12.

Table 1. Income Received by Specified Percentage of Income Receivers for Selected Years

Year	*Survey of Consumer Finance* Percentage of total money income before taxes received by highest 10 percent[a] (per spending unit)	*Department of Commerce* Percentage of family personal income before taxes received by highest 5 percent[b] (per family)	*National Bureau of Economic Research* Percentage of economic income before taxes received by highest 5 percent[c] (per person)
1919	n.a.	n.a.	26
1929	n.a.	(30)	32
1935-36	n.a.	26	(29)[d]
1941	34	24	26
1944	29[e]	21	19
1948	31	n.a.	(19)[d]
1952	30	20	n.a.
1955	29	. .	n.a.

n.a. Not available.

[a] From various issues of the *Federal Reserve Bulletin*. The figure for 1941 was estimated using data from *Family Spending and Saving in Wartime*, Bureau of Labor Statistics Bulletin 822.

[b] From Selma Goldsmith, George Jaszi, Hyman Kaitz, and Maurice Leibenberg, "Size Distribution of Income since the Mid-Thirties," *Review of Economics and Statistics*, February, 1954; *Income Distribution in the United States by Size, 1944-1950* (Washington: Government Printing Office, 1953); and current issues of *Survey of Current Business*. The 1929 figure is qualified in the discussion by the authors.

[c] Simon Kuznets, *Shares of Upper Income Groups in Income and Savings* (New York: National Bureau of Economic Research, 1953).

[d] Estimated by Selma Goldsmith *et al*. These figures are not precisely comparable with the others.

[e] 1945.

greatly abbreviated form. Although the data are not strictly comparable in their definition of income, nor in the period of time spanned by the studies, nor even in terms of the populations covered, the general impression created is that the upper income groups now receive a somewhat smaller percentage of total income than in the past. This fact is obviously of great interest in judging the distributive efficiency of the economy in maintaining mass markets — since full employment, economic growth, and technological progress are to such a very large extent dependent upon the ability of business firms to sell an ever increasing output to more and more people.

Of the three sources, the Survey of Consumer Finances shows figures only for the upper 10 percent. The reason for this is that ". . . the Survey probably does not account adequately for very large incomes . . ." so that generalizations for groups smaller than the upper 10 percent of the income receivers are not justified. The Survey figure in Table 1 for 1941 is subject to additional suspicion since it was not obtained in the same way as the other data. If it is accepted at face value, however, the decline in income going to the upper 10 percent, as shown by the Survey figures, tends to confirm similar findings in the other two studies.

Both the Department of Commerce and the Kuznets distributions rely upon income tax returns for information on the upper income groups. In view of

the fact that both studies depend upon essentially the same data, one needs to be cautious in viewing the separate results as corroborative evidence, except in a narrow statistical sense. It is of some interest to understand the amount of manipulation required to render income tax data usable. The Kuznets study, because of its elaborate documentation, affords an almost unique opportunity for following the actual step-by-step calculations of the author. In spite of the fact that the evidence is all there, the adjustments which are made in the original data and the effects of these adjustments cannot be understood without an inordinate amount of effort spent in reading *Shares of Upper Income Groups in Income and Savings*.

The present article attempts to describe as briefly as possible the procedures used by Mr. Kuznets in deriving the shares of income received by the top income receivers and to indicate how the various statistical adjustments affect the income shares received by this group. It is restricted to that portion of Mr. Kuznets' study which deals with changes in the relative shares of the *upper 1 percent* of the income receivers in total income. Obviously, the discussion applies only to Mr. Kuznets' study and can only be illustrative of the many similar problems facing others using the same data. The pertinence of examining the share of income going to the upper income groups should not be lost upon the reader, for it is exactly this portion of the income distribution in which the survey method yields the poorest information, and consequently, this is the area in which income tax returns are likely to be most useful.

The Data and Their Processing

The basic statistics which were used by Mr. Kuznets in studying the shares of upper income groups were derived from individual Federal income tax returns. These returns, classified by size and type of income, are published annually by the Bureau of Internal Revenue in *Statistics of Income*. The actual processing of the data obtained from *Statistics of Income* was done in a sequence of steps indicated by the major headings in Table 2. As will be seen from this table, three definitions of income are employed: the so-called basic income variant, the economic income variant, and the disposable income variant. For each variation of income, the share of income going to the top 1 percent of the income receivers declined rather materially from one period to the next.

Table 2. Percentage Shares of Upper 1 Percent of Income Receivers in Total Income for Various Income Periods

(Average for period)

Period	Basic income variant[a]	Economic income variant[b]	Disposable income variant[c]
1919-28	13.42	15.33	14.91
1929-38	12.86	14.67	13.74
1939-46	10.11	10.86	8.66
1939-48	9.78	n.a.	n.a.

n.a. Not available.

[a] See Simon Kuznets, *Shares of Upper Income Groups in Income and Savings*, p. 596, Table 118.

[b] *Ibid.*, p. 635, Table 122.

[c] *Ibid.*, p. 637, Table 122.

Basic Income Variant

The "basic income variant" presents the raw data as published in *Statistics of Income* free of statistical adjustment. It is simply the aggregate for the upper income groups of wages and salaries, business and partnership income, rents and royalties, interests and dividends, distributed by size of income.[4] As shown in Table 2, the share of the upper 1 percent in total income dropped from 13.42 to 9.78 percent.

In considering the basic income variant, there are certain omissions and qualifications which are important. Gifts and inheritances, quite properly, appear neither in this variant nor later. More important, however, capital gains and losses are excluded from the "basic income variant."[5] As calculated by Kuznets, the effect of including the excess of capital gains over losses in the basic variant, while raising the *level* of the shares of the upper 1 percent by 1 percent or less, would not materially affect the amount of the decline from 1919-28 to 1939-46.[6]

The basic income variant, moreover, does not include an allocation of corporate saving. The problem was considered by Kuznets, who concludes:

> . . . the effect [of corporate saving] on the decline in the shares of upper income groups since 1939 is moderate: the decline is large even after a generous allocation of undistributed corporate profits is made to the upper income groups.[7]

Perhaps as a result of this tentative judgment, the adjustment is not made in the basic variant (nor in the other variants). This problem will be returned to when the "disposable income variant" is discussed.

Economic Income Variant

The "economic income variant" represents an attempt to approximate total *economic* income received by individuals rather than the total income as reported in the *Statistics of Income*. Thus, the "basic income variant" is subject to certain statistical adjustments the purpose of which is to get out of the basic statistics income which is irrelevant and to put into the basic statistics income which is absent and, in general, to rearrange the returns in the distribution according to the size of their economic income. These adjustments are described in some detail to enable the reader to judge for himself the extent of the manipulation required to produce "economic income" from income tax returns.

(1) Employees of state and local governments were not required to file Federal income tax returns prior to 1939. As a consequence, an amount was added to the basic income variant for the upper income groups to approximate this total. This income was arbitrarily distributed each year according to the over-all distribution by size of the basic income variant *excluding the top 1 percent* of the income receivers. The adjustment was made in

[4] From net income, tax definition, capital gains are subtracted and the following items added: contributions, interest on tax exempt obligations, net loss from sales of real estate, stocks, bonds, and so on, and other deductions. See Kuznets, *op. cit.*, Table 112, pp. 524-45.

[5] See *ibid.*, pp. 13-14.

[6] See *ibid.*, Table 118, p. 596.

[7] *Ibid.*, p. 38.

such a manner that the shares of the upper 1 percent remained unchanged prior to 1939 although the other top income groups (upper 5 percent, for example) had their shares increased.

(2) Imputed rent on owner-occupied houses is not reported on income tax returns and as a result the annual national income estimates for imputed rent were added to the various income classes. The actual distribution of imputed rent by size for all years was based upon the *Consumer Expenditure Study* for 1935-36. As a consequence of this method of adjustment, imputed rent influences the over-all distribution only to the extent that total rent changed in relative importance and to the extent that the 1935-36 rent distribution differed from the over-all income distribution in specific years. The adjustment resulted chiefly in a very small decrease in the share of the top 1 percent.

(3) An adjustment for family status was necessary because the actual tax returns were tabulated by size of income using income per tax return rather than economic income per person as was desired by Mr. Kuznets. Thus, the number of individuals in the various income classes as tabulated needed adjusting to show the proper number of individuals in each income class on a per capita basis.

The calculation of per capita income was accomplished by Kuznets by dividing income *within each income class* by the number of individuals reported on the return for each class, i.e., the taxpayer plus dependents. Classes in a few cases were then rearranged according to their per capita income. (For example, if the top income group had reported a phenomenal number of dependents, individuals in this class might have come to rest at the bottom of the income scale.)

A simple example, perhaps, will make the nature of the adjustment clearer. In the original data two tax returns, one representing a family of five and the other a single individual, but both showing an income of $25,000, are tabulated in the same size class. On a per capita basis such as was desired by Kuznets, one person should have been in the $25,000 bracket and five in the $5,000 class. It was necessary ideally, therefore, to get *$25,000 and five people* out of the top income bracket and put them where they belonged in the income scale. Unfortunately, retabulation of the tax data was not possible — with the consequence that some statistical adjustment was called for which would at least approximate the desired result.

In an attempt to correct the statistics to take account of this fact, the returns were split into two groups: those representing one person (non-head of family) and those representing more than one person (head of family). Ideally, of course, the second group should also have been tabulated on a per person basis. A very rough estimate was made possible, however, by using the head-of-family and non-head-of-family split, indicating the effect of a correct classification for at least part of the population. The adjustment, admittedly underestimating the true adjustment, increased the share of the upper groups.

(4) The previous removal of so-

called "unwarranted inclusions" (income from gains from sales of assets[8]) from the basic economic income in each income class required an adjustment in the *number of returns* in each class. As in the case of the adjustment for family status, this correction is an attempt to compensate for the fact that the returns were actually tabulated by net income, tax definition, including gains from the sale of assets, rather than by economic income exclusive of such gains. The following adjustment was therefore undertaken. *Within each income class* the total gains were divided by the income of the individuals at the bottom of each class limit, the result approximating the *maximum* number of returns per class which could be in the class as a result of capital gains — assuming that all of the income reported on the return was capital gains. These *returns* (i.e, taxpayers) were then subtracted class by class from the distribution and the share of the top 1 percent was recalculated.[9] (It will be recalled that the *income* from capital gains had already been excluded from the basic variant.)

(5) A somewhat similar adjustment was made necessary by the inclusion in the basic economic variant of "unwarranted deductions" (income in the form of tax exempt interest, losses on sales of assets, taxes, interest, and so on).[10] Having included this income in the basic variant, Kuznets now attempts to adjust the shares for the fact that some of the individuals in the lower groups and their incomes belong in higher income classes (i.e., the returns, for Kuznets' purpose, should have been classified by their net income, tax definition, *plus* these unwarranted deductions). In doing this, it was arbitrarily assumed by Kuznets that these unwarranted inclusions were concentrated in a tenth of the returns *within each income class*. The total income of this tenth was obtained by adding the total unwarranted deductions for the class to the total net income for this tenth of the class (estimated as the product of the number of returns in the tenth and the estimated per capita net income for the class). The per capita income for this tenth was then calculated and the returns and income *added* to the class whose economic income per capita most closely approximated that of the tenth in question. This was done for each income class for each year and the shares recalculated. In 1929, for example, 16,309 individuals from the lowest income class were assigned to the "$15,000 and over" income class.[11] Roughly 10 percent of those in the

[8] Defined, *ibid.*, p. 387.

[9] See *ibid.*, pp. 423-24, for sample calculations.

[10] Defined, *ibid.*, p. 394.

[11] In 1929 there were 163,090 people represented by returns reporting income of less than $1,000 per return excluding persons assumed to report gains alone. All of the unwarranted deductions for this income class were assigned to 10 percent of these individuals (16,309). *Total* income for these returns was computed as the sum of net income, $3,588,000, and unwarranted deductions, $295,485,000, or in total, $299,073,000. Income per return was $18,338 for the tenth of the returns in this class. These 16,309 returns and the total income calculated above was then assigned to the "$15,000 and over" income class (along with returns from other classes). After this adjustment was completed for each size class, the share of the top groups was recomputed. See *ibid.*, pp. 425-26.

Table 3. Derivation of Economic Income Variant from Basic Income Variant, Share of Top 1 Percent

(Average for period, in percent)

		1919-28		1929-38		1939-46	
Basic income variant			13.42		12.86		10.11
Less:	Imputed rent[a]		−.13		−.09		−.05
Add:	Compensation of state and local government employees[b]		.....		.....		.....
	Family status[c]		.60		.58		.38
	Unwarranted inclusions[d, f]	.57	1.44	.29	1.33	.17	.43
	Unwarranted deductions[e, f]	.88		1.05		.26	
Equals:	Economic income variant[f]		15.33		14.67		10.86

[a] See Simon Kuznets, *Shares of Upper Income Groups in Income and Savings*, p. 320, Table 82; discussion, pp. 318-25 and 360.

[b] See *ibid.*, p. 312, Table 80; discussion, pp. 308-18; sample calculations, p. 356. Compensation of state and local government employees was assumed not to influence share of the top 1 percent.

[c] See *ibid.*, p. 368, Table 92; sample calculations, pp. 412-15.

[d] See *ibid.*, p. 389, Table 96. Procedure explained, p. 422; sample calculations, pp. 423-24.

[e] See *ibid.*, p. 396, Table 98. The figure is small for 1939-46 because no adjustment was necessary after 1943. Procedure explained, p. 422; sample calculations, pp. 425-27.

[f] Figures do not add to totals presumably because of rounding.

upper 1 percent of the income receivers in 1929 constitute individuals who were thus allocated to this group from farther down the income scale.

For both unwarranted inclusions and unwarranted deductions, the adjustment allowed for the maximum (or at least according to Kuznets, a very generous) effect on the shares of the upper income groups. Kuznets professes the hope that this will in part counterbalance the incomplete adjustment for family status. For unwarranted inclusions (gains) the adjustment increases the average share of the upper 1 percent by roughly one-third of 1 percent for the whole period 1919-46.[12] The adjustment for unwarranted deductions increases the shares of the upper 1 percent on the average by four-fifths of 1 percent.[13]

Table 3 summarizes these various adjustments by 10-year periods. Two aspects of the adjustments deserve comment. First, they are numerically small. Second, the size of the adjustment decreases with time. Of the total decline from 15.33 percent of total "economic income" in 1919-28 to 10.86 percent in 1939-46 (4.47 percentage points), roughly one-fourth (1.15 percentage points) can be accounted for by a decline in adjustments. Thus a substantial part of the *decline* in the shares of economic income going to the top 1 percent of the income receivers is based upon adjustments of the raw data which are purely statistical and somewhat arbitrary in nature. Undoubtedly the adjustments, though far from definitive, were as good as could be made.

[12] *Ibid.*, p. 388.

[13] *Ibid.*, p. 395.

Disposable Income Variant

The last and in some ways the most interesting of the three income con-

Table 4. Derivation of Disposable Income Variant from Economic Income Variant, Share of Top 1 Percent

(Average for period, in percent)

		1919-28	1929-38	1939-46
Economic income variant		15.33	14.67	10.86
Add:	Excess of gains over losses from sales of assets[a]	1.17	.23	.55
Less:	Unwarranted inclusions[b]	−.57	−.29	−.17
	Federal income taxes[c]	−1.02	−.88	−2.58
Equals:	Disposable income variant[d]	14.91	13.73	8.66

[a] See Simon Kuznets, *Shares of Upper Income Groups in Income and Savings*, p. 342, Table 88; sample calculations, p. 364.
[b] See *ibid.*, p. 389, Table 96.
[c] See *ibid.*, p. 327, Table 84; sample calculations, p. 362.
[d] Totals do not agree with figures given for disposable income variant in Table 2 because of rounding errors.

cepts discussed by Kuznets is the "disposable income variant." Shares in this variant were obtained by deducting Federal income taxes from "economic income," by reincluding the net balance of realized gains and losses from the sale of assets, and by taking out the adjustment for unwarranted inclusions.[14] Thus, the variant resembles disposable income as the term is used in national income accounting except that other direct taxes and a few other miscellaneous items are omitted. The effect of these adjustments is shown in summary form in Table 4.

Disposable Income and Capital Gains

Apparent shifts in the distribution of income based upon income tax returns must be interpreted in the light of powerful tax incentives operating in the last decade of Mr. Kuznets' study which offer a clear-cut advantage in taking one's income in the form of a capital gain. Several aspects of the capital gains tax deserve notice.

First, as shown below, there has been a remarkable and increasing differential in the tax rate for the upper groups between income taken as dividends (or salaries) and income taken as capital gains.

	Tax as a percent of income	
	1920's*	1940's
Tax on capital gains	12½	25
Tax on income over $200,000	20	94

* After 1921.

One needs only to place oneself in the position of a person in the "million or more" bracket as reported in *Statistics of Income* to appreciate the significance of these figures. In the 1920's, an income of $10 million taken as "income" would have left roughly $8 million; taken as capital gains, $9 million. In the 1940's, $10 million would have

[14] It will be recalled that this was an adjustment required because the original returns were tabulated by size of income including capital gains — which was not wanted for economic income. When considering a distribution which includes capital gains, the original method of tabulation is entirely appropriate and hence the adjustment for unwarranted inclusions should be subtracted.

Table 5. Share of Top 1 Percent in Disposable Income
(In percent)

Year	Corporate savings excluded (1)	Corporate savings included (2)	Increase in share (2 minus 1)	Amount of corporate savings (billions) (3)
1939	12.3	12.8	0.5	$ .8
1944	6.7	8.2	1.5	5.4
1946	7.9	9.8	1.9	8.6
1918-38 av.	14.3	13.6	...	−.3

Source: Simon Kuznets, *Shares of Upper Income Groups in Income and Savings.* Figures in column 1 are shown as 12.1, 6.6, and 7.7 for 1939, 1944, and 1946, respectively, in the Basic Reference Tables (Table 122, p. 637).

"netted" the taxpayer roughly $1 million as "income" and something over $7 million as capital gains. Although this happy option is not always open to the taxpayer, where it exists or can be made to exist there is a far greater incentive to receive income as capital gains today than in the 1920's.

Second, and more important, the doubling of the capital gains tax from the 1920's to the 1940's undoubtedly resulted in fewer *realized* capital gains. Thus, during the latter part of this period the individual was faced with a very impelling reason for not realizing capital gains at all, and thus, temporarily at least, escaping all taxes. As a result of this it seems highly probable that a larger fraction of total income is taken as capital gains and that an increasing portion of this is represented by unrealized capital gains. Thus the question should always be asked, How much of the apparent decline is real and how much is due to the increased skill with which the wealthy have in later years managed to take their "income" in terms of *unrealized* capital gains? Although quantitative data on unrealized capital gains are elusive, it is not difficult to believe that this has been an important source of "income" to the upper income groups — especially in view of the $50 billion of *realized* capital gains in the period 1917-46.[15]

Seltzer, in studying the problem of capital gains and losses, concludes that "it is highly probable that total unrealized capital gains significantly exceed total unrealized capital losses during these 30 years."[16]

Disposable Income and Corporate Savings

Undistributed corporate earnings are, of course, a form of capital gains to the stockholder. It will be recalled that the basic income variant did not include an allocation for corporate savings. Kuznets discussed the problem at some length, but unfortunately did not include a detailed account of his findings. The figures shown in Table 5, however, provide at least a clue to the statistics which must have been used in

[15] Lawrence H. Seltzer, *The Nature and Tax Treatment of Capital Gains and Losses,* Fiscal Study 3 (New York: National Bureau of Economic Research, 1951), p. 7. The *excess* gains over losses in this period were approximately $16 billion (p. 112).

[16] *Ibid.,* p. 115.

judging corporate savings to be of negligible importance in the decline in the share of the upper 1 percent in disposable income.

Three things are of interest with respect to these figures. First, the difference between the decline in the share of the upper 1 percent from 1939 to 1946 including and not including corporate savings (columns 1 and 2) is fairly sizable (4.4 percentage points as compared with 3.0). Second, as the absolute amount of corporate savings increases (column 3 of Table 5) the share of the upper 1 percent declines less. One wonders, for example, what the inclusion of corporate savings would do to the share of the upper 1 percent during the period 1947-48, when corporate saving jumped from $8.6 billion to approximately $13 billion. Third, for the whole period from 1918 to 1938 the inclusion of corporate savings lowers the share going to the upper 1 percent. This is no doubt due to the fact that corporate saving during these years was negative.

The negative corporate saving, 1918-38, is in itself interesting. In another connection, Kuznets estimates an increase in reproducible wealth for about the same period at something over $70 billion. It is hard to believe that corporations did not participate in this increase through retained earnings of one sort or another. Opportunities for charging excess rates of depreciation are numerous. Indeed, it is interesting to speculate (since empirical evidence is almost unobtainable) how much of the decline in the shares of the upper income groups can be attributed to corporate saving of this nature.

It should also be remembered that "undistributed corporate profits" (i.e., corporate saving) is only one manifestation of income which is earned but not "counted" as income paid to individuals. Capital gains of one sort or another occur throughout the economy — among farmers, professional people, unincorporated businessmen, and among wage and salary earners to the extent that they own assets which appreciate in value. Although the largest part of such income attributable to the upper 1 percent is no doubt represented by undistributed corporate profits, an unknown but probably measurable fraction of the total is left unaccounted for.

Income Shares and Total Income

One further remark should be made by way of clarifying the procedure used by Kuznets. In order to calculate the share of the total income received by the upper 1 (or 5) percent of the income receivers, two over-all totals are required: (1) the total population, and (2) the total income. Presumably errors in the first are small. Errors in the second total are, to some extent, an unknown quantity. Estimates of the errors vary from 10 percent or less (Kuznets) to 20 percent or more (Stone).[17] These discrepancies in the

[17] ". . . Kuznets does not appear to make allowance for the fact that errors in differences between successive years are likely to be much smaller than the errors in the estimates . . . The general conclusion of this chapter (by Kuznets) is that the 'probable maximum percentage errors' of the final totals may be put at about 20 percent and *this percentage will apply roughly* to differences between years." Richard Stone, "Two Studies on Income and Expenditures in the U. S.," *Economic Journal*, Vol. 53 (April, 1943), p. 69. (Italics added.)

basic income statistics, although not likely to make large differences in the shares of the top income groups, are worth noting.[18] General agreement that the errors are likely to be larger in the earlier than in the more recent years enhances the significance of these remarks.

In the roughly three decades covered by the Kuznets investigation, the composition of the population has altered considerably. For example, from the period 1919-38 to 1938-46 the farm population declined from roughly 27 out of 100 to 20 out of 100. As has been pointed out by Lampman, if this has resulted in an increase in paid employment accompanied by a decrease in home production, there is likely to be an understatement of total income in the earlier as compared with the later period.[19] The same tendency is at work with respect to the larger proportion of women in the labor force now and during the first period. Although the figures in this area leave much to be desired, roughly 23 out of every 100 persons gainfully employed in 1920 were women whereas in 1950 women in the labor force had increased to about 29 out of 100.[20] Goods and services which formerly were produced in the home (baby sitting, canned goods, bread, and so on) are now purchased by working wives whose product enters into the income statistics — again leading to an understatement of income in the earlier period.

The tendency toward initial understatement in income figures as countries move toward greater industrialization is widely recognized. Moreover, this is a systematic bias inherent in currently used definitions of income as contrasted with errors of measurement and possible errors of judgment in aggregating the basic data. Since these are considerations which affect the denominator more than the numerator of the fraction of income received by the upper 1 percent, the result is likely to be an overstatement of the share going to the upper groups in earlier as compared with more recent years.

In concluding, it might be well to remember that in many cases individuals in the upper income groups are the beneficiaries of expense accounts, free services of one sort or other, and retirement benefits which may enhance their real income by an amount considerably in excess of that reported for income tax purposes.

[18] Suppose that total income in the period 1919-29 is underestimated 20 percent whereas the amount for 1939-46 is correct. In this hypothetical case the share of the upper 1 percent in the initial period is 12 rather than 15 percent.

	National income (billions of dollars)		
	1919-29	1919-29	1939-46
Income of top 1 percent	$10	$10	$10
Total income	$70 (published)	$84 (corrected)	$100
Share of top 1 percent	15%	12%	10%

By making the even more extreme assumption that 1939-46 income is simultaneously overstated by 20 percent, the share of the top 1 percent does not decline at all.

[19] See R. J. Lampman, "Recent Changes in Income Inequality Reconsidered," *American Economic Review,* Vol. 44 (June, 1954), pp. 259-60.

[20] See also *ibid.,* p. 256.

Finally, the remarks of Dorothy Brady on our knowledge of the distribution of income by size seem appropriate: ". . . we know little more than that the data are deficient in both quantity and quality, that income is very unequally distributed and that a high standard of living cannot be attained on the average income."[21] Although the paucity of data has been remedied to some extent recently, we still have a very long way to go.

[21] Dorothy S. Brady, "Research on the Size Distribution of Income," *Studies in Income and Wealth* (New York: National Bureau of Economic Research, 1951), pp. 3-4.

A Very Short Essay on "Sound"

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A PHILOLOGICAL ESSAY by an economist in *Current Economic Comment* is perhaps a bit strange. But the frequency of the word "sound" in business, economic, and political discussions and writings today prompts the feeling that an economist does have some right, and perhaps responsibility, to comment on its use. Writers and speakers ask that we support "sound" monetary policies, hire "sound" people, be in favor of "sound" foreign aid, and so on. This use of the word irritates even when the policies have one's sympathy; it infuriates when one is unsympathetic with the policies so tagged.

I knew — or thought I knew — what was meant by the word. But when, after a particularly distressing day, my support for a personally obnoxious set of "sound" policies was demanded by a printed page, it suited me to consult the dictionary regarding a precise definition.

> Sound . . . , adj. . . . 1. Free from flaw, defect, or decay; undamaged or unimpaired. 2. Healthy; not weak or diseased; robust; — of body or mind. 3. Firm; strong; safe; also, figuratively, secure; trustworthy. 4. Solid in structure; also, firm in texture; stable. 5. Founded in truth or right; not fallacious or faulty. 6. Showing good judgment or good sense; as *sound* advice. 7. Orthodox, as in religion, politics, theories, etc. 8. Thorough; as, a *sound* beating. . . .[1]

Substituting some of these in the phrase "sound policy" indicates something of what "sound" may or may not mean. Here are some of the possibilities: "policy *free from flaw, defect, or decay*"; "*healthy* policy"; "policy *not weak or diseased*"; "*robust* policy"; "*firm, strong, safe* policy"; "policy *founded in truth or right*"; "*not fallacious or faulty* policy"; "policy *showing good judgment or good sense*"; "*orthodox* policy." Many interpretations can be put upon this use of the word "sound" with several variations of meaning. There may be considerable differences between *orthodox, safe,* and *founded in truth or right.*

In the course of very little looking for cases, I came across the following: (1) "The major source of instability of the currency is budget deficits financed by bank loans to the government; therefore, the principal bulwark of a *sound* currency is a balanced budget."[2] (2) "INDUSTRY'S STAKE IN A *SOUND* MONETARY SYSTEM — The quality of a nation's money system is a very important element in the strength and *soundness* of its prosperity."[3] (3) "A liberal arts training also finds immediate value in the field of

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[1] *Webster's New Collegiate Dictionary* (Springfield, Mass.: G. & C. Merriam Company, 1949), p. 808.

[2] National Association of Manufacturers, *The Gold Standard* (New York, 1955), p. 23. The italics are mine as is the case in the remaining quotations.

[3] National Association of Manufacturers, *Perspective on Gold* (New York, 1956), p. 7.

advertising. I happen to believe that advertising has an extremely significant part to play in the maintenance of a *sound* economy."[4] (4) The *New York Times* plays its use of the word a bit differently. The following describes Secretary Humphrey. "He is a 'conservative' on the measurement of the second half of the twentieth century, and conservatives of an earlier brand as well as those who share his own are distressed and anxious over his departure, but not more so than many moderates and 'Eisenhower New Republicans.' The growth of the political 'left' in the United States has been steady and great, but not so great as to alter the fact that there is general agreement on what kind of thinking is '*sound*.' And by that generality Humphrey is rated a '*sound*' thinker."[5] (5) Finally, I came upon the following, the source of which I am not at liberty to disclose. "The content, scope, and promotional thrust of the . . . Program is designed to emphasize informational and educational activities and therefore will be operated in accordance with *sound* educational principles and practices. . . . A prime purpose of the program is to stimulate and provide assistance to educational institutions, groups, agencies, and organizations in developing *sound* programs of economic education. . . . Since the principal concern of the program will be *sound* economic analysis and the dissemination of facts, techniques, methods and experimentation in fact-finding will be subordinated in terms of time and energy of the staff."

The real test is to try now to divine the meanings of the cited uses of the word. Certainly, the NAM has in mind a healthy, firm, strong, safe currency and monetary system, free from flaw and decay. But what does this mean? There are at least three positions which are espoused by economists. Some think it best that prices drift steadily downward as technical progress permits lowering of costs. Some think that a "sound" currency means stable prices. Some think that prices should drift upward as the best assurance of full employment. Alternatively, some argue for a managed currency while others insist that the less currency management we have, the "healthier" the currency. It might also be argued that a *sound* monetary system would be one which kept the quantity of money constant. It is clear that "sound money" makes sense only in the context of the objectives sought. Even these are not without difficulty. If constant prices and full employment are goals of monetary policy, it *may* not be possible, under certain conditions, to realize both objectives simultaneously.

A "sound economy" and the "soundness of its prosperity" seem to have added a time dimension, and I suppose included here is the notion of continued growth although the criteria are not quite clear, i.e., growth of profits, growth of output of consumer goods, growth of available leisure, or what?

The *New York Times* at least makes an attempt to indicate its meaning, and quotation marks show its concern. Secretary Humphrey is dubbed a "conserv-

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[4] Clarence B. Randall, *The Randall Lectures* (White Plains: The Fund for Adult Education, 1957), pp. 22-23.

[5] June 2, 1957, p. E3.

ative" — *ergo* "sound."[6] The *Times*'s usage comes fairly close to the dictionary's "orthodox," but the "unorthodoxies" of economics are so widely accepted today that Mr. Humphrey would find himself apart from the pack.

The meaning of the last citation is incomprehensible. It may have been written that way for a purpose — proving my point! As I read the literature of professional educationists, I gather that there rages a great controversy on just what constitutes "sound" educational policy and practice — Is there too much vocational training? Too many fringe courses on fripperies and not enough classics? What happened to Latin and mathematics? Should pupils read by letters or by phonetics? And as for "sound economic analysis," any consensus would be difficult to obtain, especially if the area so described had to include both Mr. Humphrey and, for example, Professor Alvin H. Hansen.

"Sound" is more than a weasel word — a word or phrase which is so ambiguous that it has little meaning — because its antithesis is "unsound." Because of the pseudomoral, pseudoethical connotation of the word, this requires a sort of "unholy" defensive position for one who does not accept the "soundness" of the proposals, and those who disagree with "sound policies" immediately face the task of establishing a defensive position for their "unsound" ideas. If the word "desirable" is substituted, "desired by whom and why?" immediately arises in the mind of the reader or listener — and this is frequently a vital question. But the meaning of the phrase "sound for whom?" is more than a shade harder to come by. Substituting "orthodox" is, or should be, anathema in a country with a prolonged history of economic revolution and one *founded* on political revolution! Too, orthodoxies in our economic-political environment change so quickly that one almost has to specify which of the orthodoxies is currently in vogue.

"Sound" is not used, for the most part, in any of the senses above, but rather as follows: "Sound" policies with respect to anything are those which "I" or "we" or "this organization" happen to espouse. A "sound executive" is one not very likely to do anything with which his superiors would violently disagree — either in the office, the voting booth, or his home. "Sound policy" for the American Tariff League, an organization of American producers who face foreign competition from imports, is just the opposite of "sound policy" for the National Foreign Trade Council, whose members are mostly exporters depending on a high level of imports to provide dollar exchange to pay for purchases of United States goods for export. In this case, "sound" does not mean "right," "good," "orthodox," or "free from fallacy." It becomes partly a snare for the careless reader because clearly *everyone* favors *"sound"* policies; partly it is used by careless or lazy writers or speakers not taking the trouble to spell out what they really mean.

[6] This is almost enough to bring on another essay titled "What *Is* A Conservative?" It would start with the thesis that the great "liberals" of yesteryear — Mill, Locke, Hume, Adam Smith — are the "conservatives" of today.

What then is "sound" policy with respect to use of the word? When and if it is used — and it should not be — it should be honestly defined for the edification of the writer or speaker at least — if not for the enlightenment of those to whom the communication is addressed. When we see or hear it, a danger flag with a question mark of suspicion should become a part of the mental imagery.

Books Reviewed

The Industrial Structure of American Cities. By Gunnar Alexandersson (Lincoln: University of Nebraska Press, 1956, pp. 134. $6.50)

Gunnar Alexandersson's discussion of industrial structure in urban America is a different piece of research. It has the peculiar twist that while one may disagree with some of the assumptions on which it is based, the results are still interesting.

In essence what Alexandersson seeks to show is the relative structure of manufacturing in cities in the United States. Moreover, he wishes to compare the amount of production which is intended for local consumption with that intended for export to other areas. Both types of data are presented on a series of colored maps. The description accompanying the maps is not detailed, but should be especially useful to persons unfamiliar with the economic geography of the nation.

The basic support on which the classification rests is a variant of the "localization coefficient" technique as used in economic base studies and other studies using a similar methodology.

Alexandersson rejects the localization coefficient as used by Homer Hoyt on the grounds that the United States as a whole is an arbitrary norm and is therefore unsatisfactory. Also, the direct method of asking firms the amount of their local versus nonlocal sales is viewed as dubious. The feeling is that many firms do not know their market area well enough to be very precise.

The method finally adopted is that of taking minimal values necessary to supply the needs of a normal city. The details of estimation procedures are beyond the scope of this review, but rest on assumptions as mechanical and inflexible as those of the localization coefficient technique.

The real issue is, Just what does one wish to do with this division based on localization coefficients? If the objective is to make some rough and crude comparisons between cities, evidently there is not very much objection. Yet this really does not tell us a great deal about the individual cities' economic structure.

This reviewer agrees with Alexandersson that localization coefficients based on some national to local ratios are not very useful. With the great degree of product mix in the manufacturing industry, the use of localization coefficients as a means of showing geographic specialization is bound to result in a substantial degree of error. This applies even if four digit codes are used.

However, the method of direct questioning cannot be rejected out of hand and as *an operational procedure* would in fact be preferred. If limited funds prohibit this method, then it would be just as well to use one's own knowledge of the city and estimate the nonlocal share industry by industry. The last thing to do is use localization coefficients.

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The Economics of Soviet Steel. By M. Gordon Clark (Cambridge: Harvard University Press, 1956, pp. xiv, 400. $7.50)

The development of the iron and steel industry in the Soviet Union is of major concern to the United States. Our economists are interested in the extent to which the Soviets can plan the expansion of a basic industry in such a way as to provide a tough, competent rival to our own private steel industry. Our industrialists are concerned with the extent to which the Soviets can copy steel-making processes and then make original improvements. Western military strategists are deeply concerned with the capacity of the Russians to put into action a military machine based on modern technology. To these specialists as well as to the general reader, this volume is significant. It is one of the few good individual industry studies of the Soviet Union extant in the English language. Its implications are particularly timely in view of the apparent trend toward decentralization now under way in the USSR — a trend which makes good sense in the light of Professor Clark's analysis.

This book is organized into five major parts. Part I, consisting of three short chapters, is devoted to the historical evolution of Russian steel-making capacity and the rate of investment. In some respects these are the least satisfactory chapters in the volume. Since the evidence is fragmentary, the analysis is uneven. On some points the discussion is excessively detailed and on others is lacking altogether. However, several observations of this section are of great interest. Professor Clark calls attention to the fact that the Communists inherited a very considerable steel industry from the Czarist regime on which to base their spectacular expansion. Russia had in 1913 some 10 specialized pipe-making plants producing 78,000 tons of pipe. Stalin did not start from scratch. The author also notes that the Soviets set as their early goal the task of overtaking the United States, not just in total production, but in per capita output — a goal which has proven increasingly difficult to approach in very recent years.

In the second part of the volume Professor Clark devotes three chapters to the problem of plant size and types of steel products required to meet the needs of an economy expanding under forced draft. The chapters are technical in nature. They are noteworthy in pointing out the serious errors in early Soviet planning and the subsequent efforts at correction.

Part III, consisting of eight chapters, deals with the location of the steel industry, its resource base, and its potential. It is here that this volume makes its most important contribution. It reflects careful scholarship, it is well organized, and its usefulness is enhanced by comparisons with the United States. Here is the best analysis in English of the six major influences on the location of Russia's basic industry: coking coa resources, iron ore supplies, scrap supply, the pull of consumer markets, th role of transportation, and the needs o military planning.

In location policy the Soviet plan ners made serious mistakes. They un derestimated the role of scrap in locat

ing plants. They underestimated the importance of meeting needs of local consumers. By doing so, they greatly overburdened the railroads. They did not foresee the danger of German aggression. On the other hand, these errors have been more than offset by achievements. They developed new sources of coking coal so as to minimize hauling. They have installed the latest technology in a surprisingly short time. They have enlarged capacity. They have provided for making "quality" steels of every desired type. It has been a process of mistakes followed by correction at great cost.

The most significant single question raised by Clark's book is, Will Russia be able to expand as rapidly in the next 25 years as in the past 25 when she rose from a fifth-rank steel producer to the role of number two rival behind the United States? It may be possible, but Clark raises some serious doubts. The Soviet Union is already rapidly using up her resources of high-grade iron ore. She must turn either to low-grade domestic ores or high-grade foreign ores. In either case she faces higher costs. Easily accessible coking coals are also limited. At the same time Russia's East European satellites and China have insatiable demands. So have her military planners. A more moderate rate of expansion appears to be a strong possibility. More restraint on military expenditures and satellite commitments may follow. Past mistakes in central planning make decentralization appear attractive. Recent announcements in the press suggest that Clark's analysis is thus far proving accurate although foreign observers have long since learned to be very cautious in placing much confidence in Soviet press announcements.

Part IV is of particular interest to economists. It consists of two chapters. One is devoted to productivity. Unfortunately the treatment is somewhat sketchy. The reader would be better advised to turn to Walter Galenson's *Labor Productivity in Soviet and American Industry* (New York: Columbia University Press, 1955). The other chapter contains a summary and conclusions. It is thought provoking but does not do the preceding chapters full justice.

All students of Russian industry will regard this volume as an important contribution to its field. Many will disagree with particular findings. For example, this reviewer would question Clark's statement that "the Soviets can rely on a steadily increasing supply of labor" (p. 271). In the next few years the annual increment to the male labor force will probably be less than in the United States as a result of the wartime birth losses. For the future, Soviet urban industry must adjust to the exhaustion of surplus agricultural labor and the apparently precipitous decline in the Soviet birth rate which today is no higher than our own.

Seven technical notes of great value to scholars of the Russian economy are included in an appendix. Scholars will also thank Professor Clark for including an extensive bibliography comprised almost entirely of Soviet sources. This adds to the excellent footnoting throughout the volume.

John B. Parrish
University of Illinois

National Income Visualized. By Arthur O. Dahlberg (New York: Columbia University Press, 1956, pp. x, 117. $3.50)

This book, a product of the Visual Economics Laboratory of Columbia University, presents a diagrammatic portrayal of the relationships inherent in national income accounting. It represents an attempt to build up a set of graphic symbols that can be used as a means of communication for economists, in much the same way that engineering drawing provides a means of communication for engineers. It is true, of course, that economists have long used diagrams of one sort or another for the analysis of economic problems; but the author would argue that such diagrams rarely are used with the precision of engineering drawings and that to achieve this kind of precision a new tool is needed. Dahlberg's use of graphics is, in fact, of a quite different nature from the diagrammatic analysis of economic theory. It is intended to describe empirical interrelationships rather than to demonstrate particular theoretical points. In this regard, it is an outgrowth of the familiar circular flow chart, greatly elaborated. Inasmuch as the empirical relationships that are being described are sometimes rather complex, the diagrams also become complex. Graphic portrayals of this sort usually rest upon some sort of analogy; Dahlberg's rests on plumbing. (There are minor departures: at some junctures step-pulleys connected with styluses produce readings on price meters — although even these could be actuated by hydraulic turbines.)

One major difficulty with the development of complex flow charts is that the chart is still an analogy, and it becomes forced when carried to extremes. Dahlberg, in an attempt to cover all of the details of the United States national income accounts, spends a good deal of his time in rather involved explanations of relatively unimportant items. He devotes a whole separate diagram, for instance, to production carried out in the household sector (which is composed of the output of domestic servants and nonprofit institutions). The graphic treatment of saving and investment has also presented problems for him; in fact, it is difficult to tell whether his explanation of saving and investment is dictated by the requirements of his graphic presentation, or whether he does consider that all savings are passed on to some other sector which then invests them. The same kind of problem also arises in the graphic treatment of the government sector.

There have been other graphical analyses of the circular flow of income and expenditure based on other analogies. One such was Morris Copeland's presentation in terms of electrical circuits.[1] Electrical circuits do have certain advantages for this purpose over plumbing, in that the introduction of amplifiers, transformers, delays, capacitors, and so on permits a wider variety of types of economic behavior to be described. But even so the presentation becomes very complex, and frequently strained, so that it is really necessary for the reader to understand economics very well in order to be able to under-

[1] *A Study of Moneyflows in the United States* (New York: National Bureau of Economic Research, 1952).

stand the diagrams. Their usefulness as teaching tools is therefore questionable.

A somewhat different, and in many ways more successful, approach to the flow chart has been made by the Dutch Central Planning Bureau,[2] to show the structure of inputs and outputs in various industries. Here, the graphical analysis is restricted to a fairly simple, partial situation, to show the composition and the channels of the inputs and outputs of particular industries. None of the more difficult graphical problems arise, and the reader has the feeling that the graphic presentation really does tell the story more simply than the accompanying tables.

NANCY D. RUGGLES

New Haven, Connecticut

Social Characteristics of Urban and Rural Communities. By Otis D. Duncan and Albert J. Reiss, Jr. A volume in the Census Monograph Series for the Social Science Research Council and the Bureau of the Census, U. S. Department of Commerce (New York: John Wiley and Sons, 1956, pp. xviii, 421. $6.50)

The principal source of data for this study is the Bureau of the Census special population report *Characteristics by Size of Place*. In many ways this study follows the 1937 report *Social Characteristics of Cities,* published by the International City Managers' Association. Additional classifications of places by size and detailed tabulations used by Duncan and Reiss give a much more definitive analysis of the demographic and socio-economic characteristics of communities of various sizes. To the authors' credit, they do not become involved in an academic discussion of the community concept but analyze the demography of population aggregates as conventionally conceived. This adds to the practical utility of the volume.

The monograph is divided into four main parts which examine the major "independent" variables. The authors selected these factors because they are among the basic morphological features of a community derived from previous studies.

Part I discusses size of community. Chapters are devoted to analyzing community size and urbanization, age and sex composition, race and nativity composition, marital status and family characteristics, mobility, education, labor force and occupation, income, and village population. Eleven size-of-place classifications are used: urbanized areas with population of more than three million; six other urban categories; two rural incorporated categories, under 1,000 and 1,000 to 2,500; a rural nonfarm residual category; and the rural farm population.

The second independent variable, spatial organization of communities, is discussed in the five chapters of Part II. Analyses are directed to characteristics fairly similar to those covered in Part I. Spatially or ecologically conceived, the treatment includes suburbs and the urban fringe; the rural-urban fringe; urban influences on rural population characteristics; and metropolitan suburbs and independent cities. In

[2] Netherlands Central Planning Bureau, Monograph No. 8.

particular, suburbs are different from central cities in family organization and functions, having higher fertility ratios, higher proportions married, fewer separated or divorced, lower proportions living in quasi-households, smaller percentages of women employed in the labor force, and lower mobility. Suburbs represent newly formed growing families with high degrees of stability. In many respects metropolitan suburbia is more like the smaller nonmetropolitan urban places than like the central metropolis. The urban fringe defined as "non-suburban population of the territory in urbanized areas outside central cities" (p. 118) is like the suburbs in residential composition. Gradients in index values of specific characteristics such as sex ratios, fertility, marriage rates, and mobility are highest in the urban-fringe communities, intermediate in suburbia, and lowest in central cities. These findings also substantially corroborate a widely accepted generalization that urban influences are related to distance from the center in the effect they have on particular characteristics of the rural farm and rural nonfarm population.

Part III treats community growth and decline in a single chapter which focuses upon growing and declining standard metropolitan areas and urban places. As a rule, older, long-established centers are declining or remaining static, whereas the newer, more recently established centers are growing. Although no attempt is made to establish the causal factors related to the growth or decline of population centers, economic and demographic characteristics are markedly different between centers that are growing and those that are declining. Growing places have higher birth rates, higher marriage rates, greater mobility, higher educational status, greater proportions of the labor force in white collar jobs (commerce, government work, and entertainment) than declining places. Regardless of size, declining places have greater proportions of males and females employed in manual occupations as operatives and kindred workers. Apart from size, in places that are declining about one-third of the labor force is employed in manufacturing.

Part IV consists of five chapters and examines the functional specialization of communities. This term is applied to kinds of "export activities," which create an inflow of income into the community over and above that required for local demand and maintenance. Correlates of specialization are manufacturing, wholesale and retail trade, higher education, military national defense, public administration, transportation, entertainment, and recreation. The authors fully explore the relationship between these functions and the extent to which they predominate and their effects on demographic, economic, and socio-economic characteristics of communities.

Two appendixes describing the areal units used and presenting detailed statistical tables complete the monograph. It is the reviewer's opinion that judicious use of pertinent text tables and graphic materials make this monograph outstanding in spite of the complex quantitative materials.

This monograph should be readily available as a source book of wide-

spread interest among many users. Teachers in urban and rural sociology will find it excellent as a reference; economists dealing with marketing, industrial location, and business analysis should find it of much value; practitioners and chambers of commerce interested in community development, planning, industrial expansion, and related activities will find pertinent and timely information of inestimable value.

Those who have frequent occasion to use official Bureau of the Census statistics from the decennial enumerations will be encouraged to find these materials put into such a meaningful and usable form. It is hoped that this and the previous census monograph mark the beginning of a new era in the utilization of census information.

C. L. Folse

University of Illinois

Big Business and the Policy of Competition. By Corwin D. Edwards (Cleveland: Western Reserve University Press, 1956, pp. x, 180. $3.50)

In this short book, based upon four lectures arranged by Western Reserve University and the Case Institute of Technology, Corwin Edwards offers a vigorous, eloquent — and wholly uncompromising — defense of antitrust policy against all challengers. Some readers may not warm to the evangelical tone of the work. But Edwards is entitled to plead that, in recent years, the friends of the antitrust agencies have been provoked beyond bearing by the intemperate criticisms of people who should know better.

His first concern is to rebut the counsel that we should stop harassing large firms with antitrust suits because they seldom have much monopoly power, and even when they do, such power is as nothing in the balance when weighed against the blessings which flow from their research laboratories. In reply Edwards maintains that (a) large firms *do* have monopoly power that is worth bothering about, (b) the tie between giant corporate size and economic progress is insufficiently explored, probably exaggerated, and possibly nonexistent, and (c) antitrust policy is concerned with something more than monopoly narrowly defined as power to influence price by varying output.

The demonstration of points (a) and (b) is disappointing because Edwards has not the space to marshal the evidence that would establish them conclusively. Unfortunately, the need for brevity leads him to employ several doubtful short-cuts in disputation. Thus to show the abuse of monopoly power by big firms he cites the many occasions on which the fifty or so largest corporations have suffered defeat in antitrust suits — a fact which, standing alone, proves nothing of the sort. The heart of the book, however, is Edwards' development of his thesis that great corporate size confers powers that are distinguishable from monopoly.

A congressman or labor leader familiar with the textbook definition of monopoly probably will wonder that Edwards finds it necessary to argue this self-evident proposition. Unhappily, what is obvious to him has been largely forgotten by economists whose preoc-

cupation with the impersonal aspects of price making has caused them to depreciate the roles played in the business world by intrigue, anger, envy, friendship, and the other stuff of life. Yet once again Edwards is badly served by his need to cut short his argument; and his analysis does little to make clear the nature of the powers inherent in size. The lobbying activities of big firms are cited; the political coups of small business go unmentioned. The possible use of a patent infringement suit to intimidate small rivals is noted; no importance is attached to the fact that such suits are notoriously difficult to win. The success of large firms in securing quantity discounts is traced to their superior bargaining power; the possibility is discounted that a seller really does make a substantial saving in costs by accepting an order of $100,000 rather than ten orders of $10,000 apiece.

In the last chapter Edwards moves to counter the plausible heresy that, in an antitrust suit, the defendant should be allowed to offer his good economic performance as a defense against a charge of suppressing competition. This reviewer must confess to getting lost in this controversy. It is unlikely that Edwards would accept a policy of maintaining competition at the price of a manifestly poorer economic performance, or that the advocates of the performance test would deny that, in many circumstances, the suppression of competition is by definition poor economic performance.

That the first object of antitrust policy is the improvement of economic performance most of us would accept. That the suppression of competition is strong presumptive evidence of poor economic performance we would also acknowledge. But need we follow Edwards in viewing the necessity of acting on a presumption as a duty that should be shouldered uncritically? On economic grounds the legal doctrine that any price-fixing agreement is unlawful regardless of the circumstances in which it originates is absurd. The doctrine is sensible only because it greatly simplifies the work of the antitrust agencies. May we not hope that improving administrative technique will enable the courts to test more directly for economic performance?

As a book this small volume leaves much to be desired. As a collection of lectures, it attests to the good fortune of the audiences before whom they were given. Corwin Edwards is often debatable — but never dull.

Donald Dewey
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Science and Economic Development. By Richard L. Meier (New York: John Wiley and Sons, and Cambridge: Technology Press of Massachusetts Institute of Technology, 1956, pp. xviii, 266. $6.00)

A first glance at Richard Meier's book suggests that here is a modern-day technocrat who has prepared a handbook for the realistic crystal-ball gazer. Such an assessment is, however, somewhat unfair both to the spirit and content of *Science and Economic Development.* In four principal chapters, Professor Meier presents in outline fashion (1) a description of the present state of the world in terms of population, natural resources, and "human

needs"; (2) some of the possibilities for producing new types of food and new ways of producing the old types; (3) prospects for exploiting new fuel sources and using fuel more "efficiently"; and (4) a sketch of the physical and some of the social attributes of a country which is trying to provide an "adequate standard of living" for all in the face of severe scarcity problems.

In the process, a mass of most interesting data is assembled. The reader, for example, is presented with computations showing per capita "human needs" for water, food, fiber, fuel, power, iron, and so on, all reduced to energy terms; protein yields per acre for alfalfa, peanuts, milk, beef, and other products, and prospective marginal costs of production; and costs (in terms of energy as well as dollars) of different modes of transportation ranging from walking and bicycling to transport by helicopter, pipeline, and ocean-going ship. The reader will find a diagram showing a workable solar heating system, a possible design for a plant manufacturing food and fuel from algae, and a suggestion for a continuous-flow steel plant using the hydrogen reduction process.

Most social scientists will probably find the last half of the book (especially pp. 127-97) most interesting, for it is here that Professor Meier discusses the changes in transportation, manufacturing, communication, and construction which may (will?) accompany increasing shortages of certain resources and likely changes in technology. It is in this part of the book too that the author indicates the changes in living patterns that will have to occur if a resource-poor country, e.g., India, is to provide everyone with at least a "minimum adequate standard of living." It is interesting to note that this minimum adequate standard of living would cost about \$330 per person per year in 1950 prices and would require between \$1,800 and \$3,500 in installed capital of all sorts — if the changes in population, technology, and tastes which Meier envisages take place.

A series of quotations from the last half of the book will give the flavor of the discussion. On human needs versus resources:

> . . . with technics held constant but applied as well as we know how — it is possible to mark off critical points in the future when specific needs will begin to exceed potential supply. For protein foods this date is about 1960, whereas for fruits and vegetables it is about 1970, and for carbohydrate foods some time after 2000. . . . fossil fuel must start declining about 2050 [except in North America] . . .

Professor Meier, it must be noted, is assuming a world population which may grow ultimately to 5 billion and will be 3 to 3¾ billion by A.D. 2000. Thus the Indian subcontinent and China each may have 1½ billion people; the Nile Valley may have over 100 million and "virtually continuous urbanism extending for hundreds of miles becomes quite a real possibility." Regarding transportation, food, and power:

> If one were to start afresh and devise a pattern of urban living that was both convenient and efficient . . . it would probably be linked by an arterial network of high-speed electric railways which hauled passengers by day and freight by night. A system of bicycles, carts, car-hire, and small delivery vans working out of each station would probably be the most effec-

tive means for local distribution . . . a personal carry-around radio-telephone system. . . would become convenient to call taxis or other vehicles to whatever out of the way point persons happen to be stranded . . .

. . . . . .

The only economical solution [to the problem of perishable foodstuffs] is to insist that the large cities employ within their own boundaries all or many of the new technologies [such as algal culture, hydroponics, fish farming]. . . . the [microbiological food] installations will expand to thousands of acres in extent and become almost fully automatic. . . . The major output would be a wet protein-rich foodstuff, but there would also be important quantities of fertilizer . . . Many of the problems affecting the acceptance of new foods can be solved by imaginative people without the benefit of extensive scientific training.

. . . . . .

[Atomic power] is most efficiently produced in large quantities and should therefore be located close to the load center in large urban areas. The requirements of safety, however, suggest a location carefully isolated from human habitation. Thus . . . we must look forward to huge billion-dollar reservations of process industry with an atomic power plant holding the central position and iron, aluminum, chlorine, caustic soda, nitrogen, phosphate, acetylene, and allied industries nestled around it.

With this general picture in mind, Meier looks forward to the time when 5 to 10 percent of the labor force will be in agriculture; 10 to 15 percent in manufacturing; 20 percent in various construction activities; and the remainder in the broad array of service occupations.

Let me conclude with a portmanteau quotation on housing which will amuse, aggravate, or entice the reader, depending on his preferences:

By going through this process of design several times . . . it becomes apparent that 6 square meters per person, as a population average, ought to be sufficient living space for a home. . . . When considering the organization of shelter, the Western man must thoroughly divest himself from a middle class set of "ought-to-haves." Why, for instance, should roughly 20 square feet be allocated solely for one person's bed? . . . If the floor tends to be drafty, then a hammock may be the solution. . . . Nothing in the physiology of man demands [chairs, divans, and tables] in order to achieve conveniently a comfortable relaxed state. . . . Among the most wasteful ideas invading the world today are the American concepts of the ideal kitchen and bathroom. . . . They are also highly prestigious.

John Buttrick
University of Minnesota

Dynamic Factors in Industrial Productivity. By Seymour Melman (New York: John Wiley and Sons, 1956, pp. xiii, 238. $4.75)

Professor Seymour Melman treats two phases of industrial growth, the mechanization of production and the rise of administrative overhead. These he regards as parallel processes, which together "have a controlling effect on the productivity of industry's man-hours."

This theme is methodically developed as the author tests in turn three related hypotheses: (1) that productivity (output per man-hour) of production workers is determined by the degree of mechanization; (2) that the degree of mechanization is in turn controlled by the relative costs of labor and

capital equipment; and (3) that the growth of administrative overhead limits the effect of rising labor productivity on the output of goods per person.

In mustering his evidence, Professor Melman provides both a close look at the individual establishment — specifically, the British automotive plant and the postwar trend toward the installation of materials handling equipment — and a broad view of mechanization in British and American manufacturing industries. In both cases, the tenor of the evidence is clear: gains in output per man-hour paralleled the process of mechanization, and the process of mechanization accompanied a rising trend in average hourly earnings between 1938 and 1950 that was considerably (or somewhat) more marked than increases in the cost of capital equipment (depending on the particular statistics that are put together).

Up to this point, the reader is on comfortable ground. Neither businessman nor economist is apt to quarrel with the conclusions; common sense and statistics are in tolerable accord each with the other. On an operational level, the businessman is used to thinking in terms of alternative costs: investment in equipment must pay for itself by promising lower unit costs than alternative methods. On a conceptual level, the economist would regard productivity as reflecting the combination of factors of production: productivity gains would depend upon an economical utilization of relatively scarce (that is, expensive) resources by substitution of relatively plentiful resources.

But are Professor Melman's first two propositions — that output per man-hour is determined by the degree of mechanization, whilst the degree of mechanization is controlled by relative costs of labor and equipment — the *dynamic factors in industrial productivity?* What is it in fact that determines relative labor/capital costs as among countries? And what factors affect trends in relative costs within countries? These questions come quickly to mind, since the author draws on both historical trends and international comparisons in testing his hypotheses. Britain, for example, in which much of the author's field work was undertaken, is faced with inflationary pressures that threaten her internal stability and her export position in competitive world markets. Britons may take some consolation from the author's observations that mechanization and improved productivity follow a rising wage trend, the trade unionists perhaps more than the conservative government; but they will find no guide to policy. Size, composition, and growth of the labor force, standards of living and scales of production, the propensity to save and the incentive to invest — none of these plays a role in Professor Melman's scheme.

The third of the author's propositions — that growth in administrative overhead limits the effect of rising labor productivity on the output of goods per person — could be most provocative. On the evidence, the author concludes that this growth in administrative overhead is independent of advances in productivity. Unfortunately, however, the statistical evidence does not permit us to distinguish administra-

tive, technical, and clerical personnel, nor to separate executive from other functions. We are left, therefore, with a broad generalization that the occupational distribution of the manufacturing labor force shows an increasing trend toward the employment of workers other than operatives. In much the same sense, the industrial distribution of the total labor force shows an increasing trend toward employment in trade, service, and government. Both would temper the effect of rising output per man-hour of production workers on the output of goods per person; neither, by itself, tells us much about the behavior of real costs in the industrial process or the welfare implications of relative trends in output and employment.

Within the frame of reference he has set for himself, Professor Melman has been painstaking about facts and methodology. The business executive, cost accountant, or industrial engineer will no doubt find the approach congenial and the conclusions familiar. The economist is apt to regard the frame of reference as too narrow for a volume of that title.

MILTON LIPTON

New York City

Must Men Starve? The Malthusian Controversy. By Jacob Oser (New York: Abelard-Schuman, 1957, pp. 331. $4.50)

Professor Oser makes no bones about his point of view: "If the reduction of poverty is incompatible with a *laissez-faire* economy in underdeveloped areas, I would abandon *laissez-faire*." In general, he argues that the obstacles to the elimination of poverty are institutional rather than biological.

The first chapter is devoted to an evaluation of the Malthusian view. The sincerity of Malthus is questioned by juxtaposition of a number of quotations from various editions of his *Essay* and other writings. Oser points out that the pressure of population upon the limited arable land of Britain was forgotten by Malthus when the Corn Laws were in question — corn would need to be imported only when a country "had been cultivated nearly to the utmost. . . . But the British isles show at present no symptoms whatever of this species of exhaustion." Of birth control measures by married couples he disapproved, "both on account of their immorality and their tendency to remove a necessary stimulus to industry. If it were possible for each married couple to limit by a wish the number of their children, there is certainly reason to fear that the indolence of the human race would be very greatly increased; and that neither the population of individual countries, nor of the whole earth would ever reach its natural and proper extent."

The modern Malthusians differ from Malthus in offering the hope of birth control. However, in arguing that the supposed tendency of population to increase faster than the food supply is a "natural law" which explains the prevalence of poverty and hunger in much of the world, they have typically underestimated the potentialities for increased food production and oversimplified the relationship between food supply and population growth. Oser meets the static view of food supply

not only with historical evidence of great increases in output that were not anticipated but also with a review of a wealth of material on known and potential methods of increasing food production. Those who fear that public health measures and/or improvements in methods of food production will only result in further increases in population are answered with evidence that physical disability often impinges more upon the production of food and other requirements for well-being than it does upon population. In addition, Oser argues that control of reproduction will come only with improved conditions. "It appears, then, that when people have sunk into hopeless poverty and ignorance, they act as though they are powerless to control their destiny, their level of living. . . . As underdeveloped areas urbanize, industrialize, and gain in incomes, knowledge and better housing, their birth rates will fall."

A chapter on war and hunger contains a devastating critique of the Malthusian propositions that population pressure is a fundamental cause of war and that war helps to solve the problem by killing off large numbers of people. "War, instead of being the *result* of poverty, is *one of the greatest causes* of poverty that mankind has ever experienced. . . . Wherever war left its impact, the loss of wealth exceeded the cost in lives to such an extent that it is inconceivable that war corrects the imbalance between people and resources."

The role of expropriation of native peoples from their tribal lands in some of the underdeveloped countries and of long-standing concentration of land ownership in others, together with the often related phenomenon of usury, is taken up in another chapter. The contribution of these conditions to the poverty of the people is documented with a mass of data. The tendency of freehold ownership to result in fragmentation of land with the typical consequences of inefficiency and impoverishment leads the author to question land reform based on this type of tenure. "A satisfactory land reform movement should limit the right of the landowner to buy, sell, subdivide, or unduly enlarge his land holding." Land redistribution alone cannot solve the problems; other measures to promote efficiency of production, soil conservation, and the welfare of the rural population must accompany it.

Industrialization to drain off excess rural population is an essential part of any permanent solution of food and population problems. In many underdeveloped areas, seasonal unemployment and underemployment are widespread in the countryside. Investment programs which would utilize this labor could greatly reduce the poverty of these regions. Furthermore, such programs would increase the efficiency of agriculture, reduce the vulnerability of these economies to wide price fluctuations, and help to reverse the long-run deterioration in the terms of trade for producers of primary products. Capital for these investments could be supplied by the industrialized countries, particularly, Oser suggests, if they would devote the money now used for military purposes to this end. But the underdeveloped countries have significant accumulations of wealth that could be directed into industrial development by

restrictions on imports of luxury goods by wealthy nationals, appropriate tax measures, or more forceful means of tapping their funds.

The commercial policies of the industrialized countries generally and the more direct controls exercised by colonial powers in particular are treated at some length, and their role in inhibiting the development of the poorer areas is weighed. Evidence of exploitation by foreign corporations manifest in exorbitant profits and low wages, sometimes made possible by forced labor, is presented in considerable detail.

The book is written in a semipopular style, with many interesting little asides that would be cut out of a "scholarly" work. However, Oser's evidence is marshaled with care and his argument presented with cogency.

A short review cannot do justice to a book that ranges over such a broad field in the detailed fashion this one does. This reviewer accepts the judgment of Lord Boyd Orr: "It is the most complete and detailed statement of facts on the subject yet published . . . a first-class job."

Joseph D. Phillips
University of Illinois

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